The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 683.—Vol. XVIII. LONDON, SATURDAY, SEPTEMBER 23, 1848. [Price 6d.

TO CAPITALISTS—PROFITABLE INVESTMENT.

MESSRS. BELL & WATSON are instructed to SELL, BY AUCTION, without reserve, at the GEORGE INN, PILGRIM-STREET, NEWCASTLE-UPON-TYNE, on Tuesday, the 26th Sept. next, at One for Two o'clock in the afternoon (by order of the mortgagees, under an absolute power of sale, unless previously disposed of by private contract, of which due notice will be given), the WHOLE of those rich and extensive LEAD MINES, or VEINS of LEAD ORE, lying or being within or under a certain portion of ground, part of the manor of Alston Moor, commonly called

THE GALLIGILL SYKE LEAD MINES,

held and subject to the terms of a lease under the Commissioners of Greenwich Hospital, comprising the MINES under and above the ground, FIXTURES and MATERIALS, CRUSHING-MILL, DRESSING or WASHING MACHINE, TUBS, WAGGONS, WORKSHOPS, RAILWAY, and every other requisite for the produce and sale of lead ore.

These mines have been opened out during the last six years, and but partially worked, and the late proprietors have incurred very considerable expense in laying out the mines, and preparing them for the development of their valuable and exhaustless resources.

The supply of ore has, during the above period, been annually increasing; and, in the ordinary and profitable progress of working, will be for years to come capable of increased extension—during the last year producing a quantity only exceeded by three out of the numerous mines in this extensive and well-known mining district.

The quality of the ore of these mines ranks with the best, producing an unusually large portion of *silver*; and the mine has been, and is now, in profitable operation, and promising increased and large returns, by its further and more vigorous working.

Messrs. Bell & Watson are also authorised to TREAT for the SALE of the said MINES by PRIVATE CONTRACT, and will receive any proposal or communication, with that view, until the 19th of Sept. next, but not beyond that time, so as, in case of sale, to give sufficient notice to the public.

Messrs. Bell & Watson are further instructed to SELL, at the same time and place, those extensive MINES, known by the name of the GALLIGILL BENTS MINES, contiguous to the above, and subject to the same terms of lease. These mines have not been worked, and, from their extent, richness, and convenience of situation, afford a certain prospect of being profitably worked.

Further particulars may be had of, and all communications are requested to be addressed to, Messrs. Bell and Watson, auctioneers, Bank-buildings, Mosley-street, Newcastle-upon-Tyne.

The mines may be viewed on application to Mr. John Lathern, New Shield, near Alston.—Newcastle-upon-Tyne, August 24, 1848.

"IRELAND."—TO CAPITALISTS.

AUCTION OF THE INTEREST IN THE LEASE OF THE KILBRICKEN SILVER-LEAD MINES, AND ALL THE VALUABLE MACHINERY THEREON.

MR. JAMES MARSHALL, of Limerick, has received peremptory instructions to SELL, BY UNRESERVED AUCTION, at the MINES—within three miles of the port of Clare Castle, five of Ennis, three of Newmarket-on-Fergus, and 14 of Limerick, on Saturday, the 30th of September, at one o'clock, this very

DESIRABLE PROPERTY.

It is proposed that the interest in the lease of the mine (which is held for an unexpired period of 19 years, at 1-10th of the royalty), together with the MACHINERY, TOOLS, &c., be offered in one lot; and in the event of no competition, be separated, and the machinery sold by the piece; in either way, it will be well worth the attendance of manufacturers or mining companies, as, by the catalogue, it will be seen that the various lots are of the most costly description, and only two years in use.

There is a great facility for shipment, as the port of Clare is within three miles of the mine, over a good level road.

The ore is of the most valuable description—realising about 120 ounces of silver to the ton; and the mine, when stopped for the erection of more powerful machinery (which has been erected, but has never gone to work), was making large profits. This sale only takes place in consequence of many of the shareholders being unable to find the necessary funds to put the new machinery to work.

THE MACHINERY CONSISTS OF—

1 66-inch cylinder DRAFT ENGINE, with 9-ton boiler—complete.
1 27-inch DOUBLE-ACTING ENGINE, with sweep-rods, pumping and winding gear, and fly-wheel, with three boilers, of about 6 tons each.
1 20-inch cylinder DRAFT ENGINE, single action, with one boiler of 7 tons, and one of 1½ ton.
1 23-fathom 21-inch plunger lift; 1 23-fathom 17-inch drawing lift—complete.
1 20-fathom 16-inch ditto ditto; 1 16-fathom 12-inch ditto ditto—complete.
2 9-fathom 8-inch drawing lifts; 1 16-fathom 8-inch ditto ditto—complete.
1 7-fathom 10-inch ditto ditto—complete.

A quantity of main and flat-rods, whims, chains, kibbles, and other machinery, which it would be impossible to particularise in the limits of an advertisement, but will be found to consist of every possible requisite for the effectually working of the mine, which will be catalogued.

Terms—Cash: a deposit of 25 per cent to be paid on each lot, and the remainder of the purchase-money within three weeks of the time of sale. All lots must be paid for and removed at the expense and risk of the purchaser, within three weeks of the time of sale (except the large engine, for which two months will be given for the removal), otherwise the deposit will be forfeited, and vendors have the privilege of again selling the lot or lots. The purchaser pays the auctioneer's commission of 5 per cent., in addition to their biddings.

Catalogues, plans of the mines, with sections, can be seen, and all other information obtained, on application at the secretary's office, 23, King-street, St. James's, London, or of the auctioneer, James Marshall, 96, George-street, Limerick.—Catalogues can also be had at the office of the *Mining Journal*, 26, Fleet-street, London.

GLAMORGANSHIRE.—TO BE SOLD, BY PRIVATE CONTRACT, with immediate possession, the MORRISTON FOUNDRY, and the PLANT, MACHINERY, and TENANTS' FIXTURES, and MANAGER'S HOUSE, GARDEN, and about FIVE ACRES of LAND, belonging thereto—situate about three miles from SWANSEA, on the Swansea Canal, and within a mile of the lines of the South Wales and Swansea Valley Railways, which are now in course of construction.

The WORKSHOPS are commodious, and well started with all requisite machinery, &c., for immediately resuming business, and the premises are admirably adapted for the manufacture of railway engines and carriages.

For further particulars, and to treat, apply to Messrs. Llewellyn and Randall, solicitors, Neath; Mr. W. P. Struvé, C.E., Swansea; or Mr. Robert Clover, Manchester.

PEMBROKESHIRE.—STEAM-ENGINES, PUMPS, AND WAGGONS.—FOR SALE, BY PRIVATE CONTRACT, 1 40-inch cylinder, double acting, CONDENSING ENGINE, with two boilers (about 6 tons each), 54 fms. of pumps, 12-inch plunger-pole and case, working barrel, and clackpieces; also pump-rods, capstan, shear legs, and all necessary fittings to make the lift complete; 1 20-inch WINDING-ENGINE, with boiler, two drum-barrels, 300 to 350 fathoms of chain, and pit pulleys, friction rollers, &c.; also 13 IRON, and 4 WOODEN, RAILWAY WAGGONS—calculated to carry upwards of 30 cwts. each.

The engines are situated at the Broadmoor Colliery, within four miles of the Saundersfoot Harbour, and are fit for immediate use; and, never having been worked to their full power, are in excellent condition, and are only now offered for sale in consequence of the working being discontinued.

Apply to Messrs. Lewis and James Wilson, Creswell, near Cresselly, Pembrokeshire.

COAL.—TO BE SOLD, OR LET, a valuable COAL MINE, the property of Sir Thomas G. Hesketh, Bart., situate about five miles from the important manufacturing town of BLACKBURN, in the township of Great Harwood, in the county of Lancaster. The mine has been recently proved, and found, at 77 yards from the surface, to be 5 feet in thickness, and of excellent quality. It is commonly called, or known by the name of, the UPPER MOUNTAIN MINE, and extends over about 1000 statute acres, which will be divided into suitable lots.

A section of the borings may be seen by applying to Mr. Boosie, Rufford Hall, Ormskirk; or to Mr. Whittle, coal viewer, Charnock Richard, Chorley—to either of whom proposals may be sent.

TO BE LET (or a PARTNER of experience taken in), an established COLLIERY and IRONSTONE WORKS, in STAFFORDSHIRE.—The IRONSTONES are the CHALKY, BLACKSTONE, BASSY, or BED MINE, and the CANEL MINE, of the most superior quality.—The COALS are, Great-Row, Canel-Row, Eight-Foot, Ten-Foot Peacock, and Bassy Mines, measuring 37 feet—all within 50 yards of the surface. The estate is near 70 acres, in a ring fence, on good roads, and within 1½ mile of a canal and a railway. From £10 to £15, in cash, have been taken on the pit bank per day.—For particulars apply (post-paid, with real name and address, as none but principals will be replied to) to "J. Y. G.," at the office of the *Mining Journal*, 26, Fleet-street, London.

FOURDRINIER'S PATENT SAFETY APPARATUS, for PREVENTING ACCIDENTS IN MINES AND OTHER PLACES, WHEN THE ROPE OR CHAIN BREAKS.

By the ADOPTION of this INVENTION the LIVES of the WORKING MINERS may be PRESERVED, and the PROPERTY of the MINE OWNERS PROTECTED from the serious consequences of either of the following accidents—viz.:

1. From the men, or the load, being precipitated to the bottom of the shaft when the rope or chain breaks: in this case the apparatus is *self-acting*.
2. From either the men, or load, being drawn over the pulley: in this case, also, the apparatus is *self-acting*.
3. From the fearful consequences to men or load of a "whirl," or run: in this case the result is equally *certain*.

A COAL PIT, with the SAFETY APPARATUS ATTACHED to the CAGE, is daily at WORK near BURSLEM, in the STAFFORDSHIRE POTTERIES.

To inspect the apparatus, or to obtain any further information, application may be made to Mr. Edward N. Fourdrinier (the patentee), Chedleton, near Leek, Staffordshire; or Mr. Joseph Fourdrinier, 9, College-place, Camden Town, London—who are prepared to GRANT LICENSES for the USE of the PATENT.

UNDER BRITISH AND FOREIGN LETTERS PATENT.—Valuable INVESTMENT, by partnership or otherwise.—ABSORBENT and SOFT STONE INDURATED, rendered impervious to wet, frost, vermin, &c., and polished as high as marble, for all purposes.—CHALK, SAND, PLASTER, WOOD, CARTON-ROOF SHEETING, &c., treated equally as successful.

Established works, *à la Maladrérie*, near Caen, and at Tunbridge Wells, where orders are executed much cheaper than other stone, &c.—Hutchison and Co.'s offices, East Temple Chambers, 2, Whitefriars-street, Fleet-street, London.

N.B.—LICENCES GRANTED.

STEAM TO INDIA AND CHINA, VIA EGYPT.—Regular MONTHLY MAIL (steam conveyance) for PASSENGERS and LIGHT GOODS to CEYLON, MADRAS, CALCUTTA, PENANG, SINGAPORE, and HONG-KONG.

THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY BOOK PASSENGERS and RECEIVE GOODS and PARCELS for the ABOVE PORTS by their steamers—starting from Southampton on the 20th of every month; and from Suez on or about the 10th of every month.

BOMBAY.—Passengers for Bombay can proceed by this company's steamers of the 20th of the month, to Malta, thence to Alexandria by her Majesty's steamers, and from Suez by the Honourable East India Company's steamers.

MEDITERRANEAN.—Malta—On the 20th and 29th of every month. Constantinople—On the 29th of the month. Alexandria—On the 20th of the month.

SPAIN AND PORTUGAL.—Vigo, Oporto, Lisbon, Cadiz, and Gibraltar, on the 7th, 17th, and 27th of the month.

ITALY.—Genoa, Leghorn, and Civita Vecchia, at intervals of six weeks. The next vessel will leave Southampton at Two P.M. on Saturday, the 7th of October, 1848.

For plans of the vessels, rates of passage-money, and to secure passages, and ship cargo, apply at the company's offices, No. 122, Leadenhall-street, London; and 57, High-street, Southampton.

NOTICE TO SHIPPERS OF GOODS AND PARCELS, per PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY'S STEAMERS, to INDIA and CHINA.—GOODS and PARCELS sent direct to the company's parcel office, on or before 6 P.M., on the 17th of each month, are forwarded at less cost to shippers than when sent through any intermediate channel. Cases must not exceed 112 lbs. weight each, for Aden, Ceylon, Madras, Calcutta, and China; and 40 lbs. each case for Bombay. No package for India or China can, under any circumstances, be shipped at Southampton, unless it be cleared through the Custom-house, and placed alongside the steamer by noon on the 19th of each month.

Detailed particulars can be obtained on personal application, or by writing.

Parcel Department, 122, Leadenhall-street.

NEW ATMOSPHERIC APPARATUS, OR RAILWAY. NO LONGITUDINAL VALVE.

The CYLINDER may be constructed of CAST-IRON TUBES, of any convenient length—like the mains of gas or water pipes, and at the same cost.—Here an immense saving of expense will be at once effected.

These TUBES can be UNITED TOGETHER, perfectly air-tight, and a piston can be constructed to work therein—air-tight also. This accomplished, the inventor engages to preserve as perfect a vacuum as can be made for a motive-power; and he further engages to communicate this power—at little expense, and with little or no loss of power—from the inside of the cylinder to the outside, for the several purposes the same may be applied to—as for the propulsion of railway carriages (and the iron rails, as now used, will answer well)—for the raising of water, &c., to heights not limited by atmospheric pressure—and, indeed, for very many other purposes, the APPARATUS will be FOUND AVAILABLE.

CAPITALISTS' ATTENTION IS CALLED TO THE ABOVE.

No attention will be given to communications, except made through some London solicitor, of known standing in the profession.

Address "O. L. Z.," Post-office, Battersea, near London.

TO RAILWAY COMPANIES, CONTRACTORS, AND OTHERS.—ELECTRIC TELEGRAPH WIRES.—The GUTTA PERCHA COMPANY, under Royal Letters Patent, are now prepared to undertake CONTRACTS for COVERING WIRES for ELECTRIC TELEGRAPHS—each wire being perfectly insulated in a non-conducting coating of Gutta Percha, impervious to moisture or atmospheric influence. Any number of wires may be encased in one band, which will be found extremely flexible, and the only article to be depended upon for conveying electric communication under rivers, harbours, docks, &c.—a desideratum highly valuable to Government officers, railway companies, and others. Laid under ground it is equally efficient, and in any situation is more durable, economical, and less liable to injury than any substance hitherto used.

Applications (specifying number of wires, &c., required) to be made to the 18, Wharf-road, City-road, London. GUTTA PERCHA COMPANY.

GUTTA PERCHA.—BOOTS and SHOES, SOLED with this MATERIAL, being eminently non-conductors of heat, are exceedingly pleasant wear for tender feet, and however slight the soles, impenetrable by showers or salt-water—therefore, invaluable to SPORTSMEN, TOURISTS, and VISITORS to the SEA-SIDE. The idea that atmospheric heat has any detrimental effect upon Gutta Percha is a *fallacy*, and in no known instance have soles failed in adhering, which may not be ascribed to neglect of the company's printed directions. The more recent productions in Gutta Percha are elaborate cornices, highly enriched console tables, mouldings, panellings, picture-frames, &c., in every variety of finish and relief, dessert services, flower vases, fountains, inkstands, medallions, buckets, bowls, bottles, paper weights, pen trays, &c. Tubing of all sizes, from 1th of an inch to 4 inches diameter. For lining cisterns, sinks, galvanic troughs and batteries, Gutta Percha offers innumerable advantages; and, being impervious to water, unaffected by acids, alkalies, &c., it may fairly be said to be the discovery of the age.—May be had of the GUTTA PERCHA COMPANY, 18, Wharf-road, City road, and of any of their wholesale dealers.

GALVANISED IRON.—The GALVANISED IRON COMPANY beg to call the attention of the public to their PATENT MATERIAL, which is admirably adapted for ROOFING and BUILDING PURPOSES, especially for tropical climates—being cheaper and more durable than zinc, lead, tin, or any other metal, calculating weight and strength. This FIRE-PROOF MATERIAL has been used for roofing the new Houses of Parliament—shipbuilding and timbering sheds in her Majesty's Dockyards of Deptford, Woolwich, Chatham, and Portsmouth, and at many of the principal railway stations, gas-works, &c. It is also admirably adapted, and is in extensive use, for the construction of conservatories, fire-proof buildings, chain and wire-rope bridges, corrugated doors, shutters, and various other purposes. Sheathing for ships, combining the advantages of strength, durability, and economy, and is about one-third the price of copper, and for bolts, fastenings, nails, and all iron work about ships, this material is peculiarly adapted. The fastenings retain their full size and strength, not being subject to rust from contact with the acids in the wood and sea-water, and "iron sickness" is effectually prevented.

For AGRICULTURAL and HORTICULTURAL purposes, being the cheapest and most elegant and durable, not being subject to rust, nor requiring to be painted, and applicable for agricultural and ornamental fencing, hurdles, wire and lattice work, greenhouse frames, and the endless variety of articles to which iron, not subject to rust, may be applied.—Specimens and testimonials may be seen, and every information obtained, at the company's offices, 3, Mansion-house-place, City.

EMERSON'S PATENT LIQUID CEMENT.—This VALUABLE and ECONOMIC PAINT is READY FOR USE—is simple in its application, and only *one-sixth* the cost of *oil paint*; for beauty, it is pre-eminent over all other materials used on the fronts of houses—giving the exact appearance of FINE CUT STONE. It can be used at once on fresh Roman cement, or other plastering, and is particularly calculated for country houses, villas, or gate entrances that have become soiled or dingy, which can be at once beautified in any weather, at a mere trifling cost.

*** Sold in casks of 1 and 2 cwts., at 8s. and 15s. each.

PATENT MINERAL PAINT.

A brilliant black paint, invaluable as a coating for SHIPS' SIDES and BOTTOMS; also for all kinds of WOOD or METAL WORK, or the asphalte roofing felts, leaky roofs, spouts, and gutters, doors, sheds, railings, and all kinds of out-door work; and, being perfectly waterproof, will preserve their surfaces from atmospheric influence and decay; requires no preparation, and will dry in a few hours.—Price 2s. per gallon.

PATENT ASPHALTE ROOFING FELT, of the best quality, at 1d. per square foot, in pieces, 25 yards long and 32 inches wide.—GEORGE LEAR & CO., Sole Agents for the Patentees, 5, Church-court, Clement's-lane, Lombard-street.

PATENT ALKALI COMPANY'S IRON PAINT.—This PAINT is the PRODUCT of a PATENT PROCESS, and possesses PECULIAR and VALUABLE PROPERTIES, not otherwise attainable.

Its colour (as at present produced) is a rich *purple-brown*. It is perfectly free from the deleterious qualities of white lead.

It surpasses all other paints ever yet discovered, in point of *durability* and *economy*. Two coats of this paint are more than equal to three of any other description.

From its chemical composition, it is pre-eminently adapted for covering *iron*; also *wood*, and *stuccoed*, or *brick buildings*. The process by which the base of this paint is produced, makes it impossible that any change should take place in its composition from atmospheric influence. Its identity with iron secures it from galvanic action, so fatal to the durability of lead and other paints on iron work.

It has been exposed on shipping to the action of sea-water, and of the sulphuretted hydrogen, so prevalent in sea-ports and tidal harbours, for more than three years, without change.

Its *cheapness* and *strength* render it peculiarly suitable for *iron bridges, roofs*, and *railings, farm buildings*, and *shipping*. It will also cover creosoted timber.

Price, by the ton, £25, delivered in London, exclusive of packages.

Agents will be appointed for the principal towns in the United Kingdom; in the mean time, orders may be addressed to the offices of the company, No. 20, Fenchurch-street, London. JOHN A. WEST, Secretary.

STEAM-POWER TO LET.—SIX, EIGHT, or TEN-HORSE POWER TO LET, IN BERMONDSEY.

Apply, No. 6, Staple-street, Long-lane, Bermondsey.

IMPORTANT TO BLACK GLAZED POT MANUFACTURERS.—The WOOD END LEAD ORE MINING COMPANY, THRELKELD, near KESWICK, have on hand a QUANTITY of ORE, suitable for the above purpose, of superior quality—samples of which can be had on application to Mr. John Woodmass, agent, Alston; or to Mr. Brown, secretary, Penrith—who will give all particulars as to carriage, &c.—Penrith, Sept. 21, 1848.

TO CANAL PROPRIETORS, AGRICULTURISTS, AND COLONISTS.—FOR SALE, a LOCOMOTIVE TUBULAR BOILER, with double cylinder ENGINE, with PATENT GEARING, for working a continuous line of wire-rope for canal haulage and ploughing, and fitted for thrashing, pumping, mill-work, &c.—one of a pair. Can be seen at work at Mr. Tyler's farm, half a mile north of the Stratford Station, Eastern Counties line.—Apply to John T. Osborn, 10, King-street, St. James's, or to Messrs. A. Denoon and Co., Adam's-court, Old Broad-street, City.

THE BRITHDIR COLLIERY, NEWPORT, Monmouthshire, is now in regular WORK, and capable of SUPPLYING from ONE HUNDRED to TWO HUNDRED TONS of COAL PER DAY. The coal is *free* from *stone, slate*, or *sulphur*; is a most excellent house coal—makes a very *superior coke*, and, for *smithies* and *forges*, considered to be the *best* in the port.

Price of large coal ..... 8s. 6d.
Brush ..... 8 0 } per ton on board.
Small 6 0

Payment by approved bills, at two months from date of shipment, or 2 per cent. for cash.—Address Mr. Buckland, agent to the Brithdir Coal Co., Newport, Monmouthshire.

RIDER'S RAILWAY BRIDGE.—TO RAILWAY COMPANIES.—A PROSPECTUS of the above newly-invented IRON TRUSS RAILWAY BRIDGE will be FORWARDED, and CONTRACTS entered into, or LICENSES GRANTED for its ERECTION, on application to Mr. Moulton, Bradford, Wilts.

BOILER EXPLOSIONS.—TO ENGINEERS, MILL-OWNERS, AND OTHER PARTIES USING STEAM-POWER.

Mr. EDWARD WALMSLEY calls the attention of the above to a MODIFICATION of his PATENT APPARATUS for the PREVENTION of STEAM-BOILER EXPLOSIONS, which he has now fitted up at the under-mentioned places, and may BE SEEN in OPERATION at any time during working hours. It is simple, effective, inexpensive, and not liable to get out of order.

At Mr. Edward Walmsley's, Bankfield Mills, Heaton Norris, Stockport; Mr. Henry Gore's, machine-maker, &c., Lever-street, Manchester; Messrs. Thomas Grundy and Co.'s, machine makers, Preston.

ASSAYING.—Mr. R. F. MUSHET (son of the late eminent metallurgist, David Mushet, Esq.) ASSAYS IRON ORES and IRONSTONES, of all descriptions, at the charge of 7s. for each assay—giving the metallic contents of the ore with perfect accuracy.—Address: Coleford, Gloucestershire.

ASSAYING AND ANALYSIS.—Mr. MITCHELL begs to inform the MANAGERS, &c., of MINES, SMELTING-WORKS, and MANUFACTORIES, that he still continues to CONDUCT ASSAYS and ANALYSES of all PRODUCTS, metallurgical and manufacturing, at his LABORATORY,

23, *HAWLEY-ROAD, KENTISH TOWN, LONDON*,

to which address communications are to be forwarded.—Instruction in all branches of assaying and analysis as usual.

MINING OFFICES—Established Five Years.—THOMAS P. THOMAS begs to inform his friends and the public, that he has REMOVED from No. 19, Threadneedle-street, to No. 3, GEORGE-YARD, LOMBARD-STREET, LONDON (late Messrs. Phillips and Tiplady's).

N.B.—Dealer in English and Foreign Funds, Mining, Railway, Gas, and other shares.

MR. R. TREDINNICK, THREE KING'S COURT, *LOMBARD-STREET, LONDON*,

Continues to DEAL in every description of MINING, RAILWAY, BANKING, INSURANCE, CANAL, and OTHER SHARES.—Statistical information afforded gratuitously upon personal application.—MONEY ADVANCED upon the above securities.

WILLIAM W. TAYLOR & CO., MINERAL SURVEYORS, MINING SHAREBROKERS, &c.,

No. 2, ROYAL EXCHANGE-BUILDINGS, LONDON.

JAMES LANE, MINING SHARE DEALER, 75, *OLD BROAD-STREET, LONDON.*

WILSON & FRASER, 2, WELLINGTON-BUILDINGS, LIVERPOOL, and 13, EXCHANGE-PLACE, GLASGOW, have always ON SALE PIG-IRON, BAR-IRON, RAILWAY CHAIRS, and RAILWAY BARS.

MONEY.—MESSRS. KILLICK & CO. (late Winstanley, Killick, & Co.), SHAREBROKERS, inform their friends and the public, they make IMMEDIATE ADVANCES, to any amount, on the deposit of English and Foreign Railway Shares, Scrip, and Debentures, upon exceedingly advantageous terms: they also BUY and SELL every description of STOCK and MINING SHARES, at much less commission than usually charged.—6, Bank Chambers, opposite Bank of England.

ASTURIAN MINING COMPANY.—Notice is hereby given, that the NUMBERS of all SHARES in this company upon which the calls, due on the 1st of July and 1st of August last, shall not have been paid, with interest, on or before the 2d day of October next, will be advertised as FORFEITED for non-payment of calls. By order of the board, K. MACKENZIE, Secretary.

Offices of the company, 9, Austinfriars, Sept. 8, 1848.

REAL DEL MONTE MINING COMPANY.—A SPECIAL GENERAL COURT of the proprietors of this company will be HELD at the office, No. 2, Duke-street, Adelphi, on Monday, the 25th day of Sept. inst., at One o'clock precisely; for the purpose of a resolution, to the effect, that it is expedient that the company shall be forthwith dissolved.

TRELEIGH CONSOLIDATED MINING COMPANY.—Notice is hereby given, that the ANNUAL MEETING of the shareholders will be HELD at the office, as under, on Wednesday, the 4th of October next, at Twelve for One o'clock precisely. WM. NICHOLSON, Secretary.

57, Old Broad-street, Sept. 12, 1848.

NATIONAL BRAZILIAN MINING ASSOCIATION.—CALL OF 10TH FEBRUARY, 1847.

The directors hereby give Notice, that, in accordance with the decision of the meeting, held at the London Tavern, on the 28th of August [see *Mining Journal* of the 2d September], the UNPAID INSTALMENTS of the call of £4 per share, made on the 10th February, 1847, will be received, and that the same must be paid on or before the 30th September next. The instalments and calls are to be paid into the Commercial Bank of London, Lothbury, where receipts will be given for the amount; and on the shares, with the bankers' receipts, being left at this office, an acknowledgment will be given for the same. After three clear days the unmarked shares will be returned, with the instalments receipted on them, and for the others new shares will be issued in exchange.

By order, JOHN KEMPSTON, Secretary.

26, Throgmorton-street, August 30, 1848.

WHEAL LAWRENCE COPPER AND LEAD MINING COMPANY—BRIDFORD, NEAR EXETER.

This company has been formed by a few private gentlemen, and consists of 1024 shares, upon which a deposit of £3 per share will be required upon the formation of the company.

Application for shares to be made to the secretary, at the office of the company, No. 3, Winchester-buildings, Old Broad-street, London, where a list of the directors, with a prospectus, may be obtained.

CORNWALL NEW MINING COMPANY.

Capital £100,000, divided into 20,000 shares, of £5 each.

Deposit, £1 per share.

Three further calls, of 10s. per share, at 6, 12, and 18 months.

Incorporated in pursuance of the Statute of 7 and 8 Victoria, cap. 110.

Bankers—London and County Bank, 21, Lombard-street.

The CORNWALL NEW MINING COMPANY is ESTABLISHED to WORK a series of TIN and COPPER MINES, chiefly in the district of ST. IVES, which has hitherto afforded a larger profit on its return of ore than any other part of the county.

In pursuance of this plan, five have been already selected—viz.: Georgia Tin Mines, Trewartha Tin and Copper Mine, Bray Tin and Copper Mine, Trevarno Tin and Copper Mine, and Wheal Squire Tin and Copper Mine—with whose owners the directors have succeeded in making such advantageous arrangements, as to enable them to work one or more with even a small portion of the proposed capital.

The directors beg to announce, that they are NOW ALLOTING the SHARES in the above company; and, from the number already disposed of, they request parties desiring to take shares to make early application. Those to whom allotments have been made are requested to pay their deposits into the bankers of the company, as above.

The Deed of Settlement having been executed by the required number of shareholders to incorporate the company, parties who now take shares will not be required to sign it, or enter into any personal liability for calls or otherwise, although reserving their full rights as shareholders.

Office, 17, Essex-street, Strand. GEO. LOCKWOOD, Secretary.

NEW CEMENT.—The *Buffalo Journal* describes a valuable cement, which was first discovered in Sharon, Medina county, Ohio, and, after undergoing the most thorough test, has been pronounced of great value for cementing roofs of buildings, steam-boat decks, &c. The mine itself (says the *Cleveland Herald*), is one of the most singular depositories to be found. It seems as if poured into a large sandstone basin, covering some four acres, is found at the depth of 20 ft., presents an even level surface, is about 5 feet thick, and when dug out is no harder than tallow, and is entirely free from dirt and other impurities. An exposure of two weeks to the air changes the cement to stone, so hard, that it is difficult to grind. In preparing it, the cement is first ground when green, and after it has been hardened, it is ground again, and remains in a powdered state until mixed with oil for use. When applied to roofs, it becomes hard and durable as slate, and is a better fire-proof. The roof presents the appearance of fine slate, and is in no way affected by the weather. We have been shown a specimen of the cement that has been on wood nine months, which adheres closely, is as hard as the slates used in schools, shows pencil marks equally as well, and has the grit of a fine hone. The cost is small, being $3 per cwt., which, with the same amount of oil, is sufficient to cover 1200 square feet.

IS PERPETUAL MOTION AT LAST DISCOVERED?—An intelligent friend, in whom we have confidence, writes to us gravely from Lille, to state to us that a mechanic there, after 18 years' effort, has positively obtained *the means of perpetual motion*. Parties have formed themselves into a company to bring the discovery before the public; and on Tuesday, in last week, a meeting of these, including some engineers connected with mines, was held to witness the machine in operation; and the only objection made, according to our informant, was, that it was not applicable to navigation; but this the inventor denies, maintaining its applicability to all purposes. The present machine is of wood, but it is decided to make one of iron. We need scarcely say, that we are not believers in perpetual motion, having the word *friction* floating in our mind, and we have often cautioned correspondents against being led into so dangerous and deceitful a chase; but in this case the circumstances are put before us by so careful a mind, that we are bound to wait rather than to scoff. A belief prevails there that the British Government some time since offered an enormous premium for the discovery of this power; but we are disposed, on inquiry, to consider this belief erroneous.—*Builder.*

SOUTH WALES RAILWAY.—Mr. W. Mac Kiernin and Mr. Joseph Douglas, the contractors for the construction of the South Wales Railway, at and near Llanelly, have been required by the company to proceed no further for the present with their contract. Prudential motives have caused the company to suspend the works here, as well as along the whole line downwards, from Swansea to the terminus in Pembrokeshire. The responsibility of replacing any damage made by the ravages of the sea upon that part of the line over the lands between Llanelly and Pembrey, and elsewhere, of course, devolves upon the company.—*Welshman.*

A MOST INVETERATE SKIN DISEASE CURED BY HOLLOWAY'S OINTMENT AND PILLS.—James Hazlitt, millwright, of Menagh, county of Donegal, was afflicted with a dreadful skin disease, being covered with sores from the ear to the elbow, and down the right side, which rendered him totally unable to work at his trade. His malady was of so malignant a nature that he became a loathsome object of pity. In this state he was presented with some of Holloway's ointment and pills, and by persevering in the use of these wonderful remedies for a few weeks, he has been soundly cured, and is now able to resume his laborious occupation. Sold by all druggists, and at Professor Holloway's establishment, 244, Strand, London.

ON NERVOUS DEBILITY AND GENERATIVE DISEASES.

Just published, the thirty-fifth thousand, an improved edition, revised and corrected, 120 pages, price 2s., in a sealed envelope, or forwarded, post-paid, by the Authors, to any address, secure from observation, for 2s. 6d., in postage stamps, illustrated with numerous anatomical coloured engravings, &c.

MANHOOD: the CAUSES of its PREMATURE DECLINE, with plain directions for its perfect restoration. A Medical Essay on those diseases of the Generative Organs, emanating from solitary and sedentary habits, indiscriminate excesses, the effects of climate, and infection, &c., addressed to the sufferer in youth, manhood, and old age; with practical remarks on marriage, the treatment and cure of nervous and mental debility, impotency, syphilis, and other urino-genital diseases, by which even the most shattered constitution may be restored, and reach the full period of life allotted to man. The whole illustrated with numerous anatomical engravings on steel, in colour, explaining the various functions, secretions, and structures of the reproductive organs in health and disease; with instructions for private correspondence, cases, &c.—By J. L. CURTIS & CO., consulting surgeons, 7, Frith-street, Soho-sq., London.

REVIEWS OF THE WORK.

We feel no hesitation in saying, that there is no member of society by whom the book will not be found useful—whether such person hold the relation of a parent, preceptor, or a clergyman.—*Sun*, Evening Paper.

J. L. Curtis, *On Manhood, and the Causes of its Premature Decline; with Plain Directions for its Perfect Restoration.*—[Strange, Paternoster-row.]—This is a book replete with valuable advice and information. It developes the fearful shoals on which a large proportion of human happiness is wrecked, and furnishes a chart by which they may be avoided and escaped. Fortunate for a country would it be, did its youth put into practice the philanthropic and scientific maxims here laid down. One cause of matrimonial misery might then be banished from our land, and the race of the enervate be succeeded by a renewal of the hardy vigorous spirits of the olden time.—*United Kingdom Magazine.*

Manhood: a medical work.—To the gay and thoughtless we trust this little work will serve as a beacon to warn them of the danger attendant upon the too rash indulgence of their passions—whilst to some it may serve as a monitor in the hour of temptation, and to the afflicted as a sure guide to health.—*Chronicle.*

Manhood: by J. L. Curtis and Co.—Their long experience and reputation in the treatment of these painful diseases is the patient's guarantee, and well deserves for the work its immense circulation.—*Era.*

Published by the authors, and may be had at their residence; sold also by Strange, 21, Paternoster-row, London; Heywood, Oldham-street, Manchester; Philip, South Castle-street, Liverpool; Robinson, 11, Greenside-street, Edinburgh; Berry and Co., Capel-street, Dublin; and, in a sealed envelope, by all booksellers.

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THE SILENT FRIEND: a medical work, on the infirmities and decay of the generative system, from excessive indulgence, infection, and the inordinate use of mercury, with remarks on marriage, and the means of obviating certain disqualifications, illustrated by 26 coloured engravings. By R. & L. PERRY & Co., 19, Berners-street, Oxford-street, London. Published by the authors; sold by Strange, 21, Paternoster-row; Hannay, 63, and Sanger, 150, Oxford-street; Starie, 23, Titchborne-street, Haymarket; and Gordon 146, Leadenhall-street.

PART THE FIRST treats of the anatomy and physiology of the reproductive organs, and is illustrated by six coloured engravings.—PART THE SECOND treats of the consequences resulting from excessive indulgence, and their lamentable effects on the system, producing mental and bodily weakness, nervous excitement, and generative incapacity; it is illustrated by three explanatory engravings.—PART THE THIRD treats of the diseases resulting from infection, either in the primary or secondary form, and contains explicit directions for their treatment. The consequences of neglect, and of the abuse, of mercury are also clearly pointed out. This section is illustrated by 17 coloured engravings.—PART THE FOURTH treats of the prevention of disease by a simple application, by which the danger of infection is obviated. Its action is simple, but sure. It acts with the virus chemically, and destroys its power on the system. This important part of the work should be read by every young man entering into life.—PART THE FIFTH is devoted to the consideration of marriage and its duties. The causes of unproductive unions are also considered, and the whole subject critically and philosophically inquired into.

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On the Winning and Working of Collieries.

BY MATTHIAS DUNN, MINING ENGINEER.

[No. XV.—*Continued from the Mining Journal of the 16th September.*]

ON THE DIFFERENT SYSTEMS OF WORKING, WITH THEIR RESPECTIVE RESULTS.

A similar mode of working was pursued at the Aughabehy Colliery in Connaught, as explained by Mr. Griffith, in his Geological Survey:—First, a pair of levels were driven from the shaft, 40 yards each way. The workings were commenced from the upper side of the rise drift: 10 colliers, called clearers, were sent into the drift, who placed themselves four yards apart, and who excavated the bottom of the coal 3 ft., for the whole 40 yards. They were succeeded by two breakers and fillers, who wedged down the coal and filled it into wooden boxes upon sledge feet, each box holding 2 cwts. Four hurriers were next employed to draw the coals to the pit bottom. After this came the pillar man, who built small pillars to support the roof with sandstone, let down the pit for that purpose. These pillars were placed in the very centre of the drift, at the distance of 3 ft. from each other, and diagonal roads were left across the workings, which rarely exceeded 40 yards; the roof being taken down and stowed for protection. As no effectual means were adopted either for conveying air, or for keeping open the roads, the shafts were necessarily very numerous.

Similar wasteful results of imprudent working may be traced in almost every coal district. In many cases, the light of science has introduced such improvements as to prevent the ruinous effects of creeps and thrusts; whilst, in others, a rigid adherence to old custom is maintained. Thus it is that certain effects naturally follow peculiar modes of working, and as improper modes of working are cautiously guarded against in all colliery leases, and often form the subject of disputes and law suits, it becomes important to contrast the working of former days—and in districts in which it is alleged that ignorance prevails, with present practice, in this and other parts.

Creeps.—In the deep collieries of the Newcastle district, before the mode of managing inflammable gas and water was so well understood as they now are, the working of pillars was not contemplated; therefore, the judgment of viewers and managers of that day was directed to the procuring as much coal as possible by the first working, leaving merely as much in pillars as would support the roof, and no more. With this view, in all the valuable Wall's End collieries, the quantity of coal taken away varied between one-half and one-third, leaving, respectively, in pillars from one-half to two-thirds of the whole mine. This mode of working produced the desired result during a number of years; but, as time progressed, these pillars naturally weakened, and the floor of the mine became softened by water, and very generally throughout this extensive district, creeps were produced. The effects upon the surface by creeps greatly depend upon the depth of the coal, as also the extent crept over. Where that is extensive, although at a depth of 120, or 130 fms., the surface is affected, even to the cracking of the earth, and the damaging of buildings, inasmuch as the settling down of the roof progresses gradually from point to point, and it is by the settling down of one part of the building, before the other is affected, that damage is done; but it is no uncommon occurrence to find that fractures eventually take place soon after the creep has overrun the whole area. When some years had elapsed, and the pillars were found to be upstanding, they were frequently reduced by a second working, which went to the taking away of one-quarter, or one-half, and which scarcely ever failed in producing a creep. This operation could be performed by means of candles, as no great falling of the roof occurred until the whole mass was set in motion; and, before this robbing of pillars commenced, the waste was arranged under a suitable system of ventilation, by passing the air up and down the open workings.

In former times, before the effects of creeps were anticipated by the leaving of barriers of coal, it was very usual to strengthen certain parts of the workings which were considered weak by stowing—viz.: By gathering together the fallen stone from distant workings, with which to pack up or stow a range of boards, so as to form an artificial barrier, of from 20 to 50 yards in width, the established custom being to build a dry wall across the board at every four or five yards, and to fill up the remainder with loose rubbish. To aid this barrier, a bold practice was sometimes adverted to—viz.: To take out a corresponding range of pillars alongside of the said barrier, in the expectation that when the creep approached the barrier, a violent breakage of the strata would take place, which was expected to aid the effect of the barrier, in bringing the said creep to a state of rest.

Notwithstanding the above effects, these old works are frequently re-entered, and both barriers and pillars partly recovered, and the greater the space of time passed over, the better success there is in the working.

MODES OF WORKING.—The working of whole coal, or in the first process, is comparatively simple, especially where the roof is good, and the seams free from inflammable air; but the working away of pillars, and the consequent falling of the roof, is always attended with risk, and requires great practice to accomplish it properly. No sooner is a portion of the pillar taken away, than the coal must be substituted by successive rows of props; and as the removal of the coal proceeds, the back props are drawn out, if possible, thus allowing the roof to fall; and it is in the different states of tenacity of the roof that so much caution is required. If it be a brittle shale roof, it tumbles down simultaneously with the drawing of the props; but in case of thick sandstone roof, it will be seen standing whilst the coal is being excavated over an area of 200 or 300 square yards: therefore, when at length the excavation shall have reached its maximum, the strata will undergo great agitation for days together, when, at length, it falls with such tremendous violence as to affect the air current, by blowing open doors and creating fearful commotion through the entire workings. Another important consideration belongs to this question—viz.: Whether in case of a variety of workable seams, the upper or lower seams should be worked first, for this affair is often left to the discretion of the colliery lessee, under a long lease, and protected by the clause of fair and workmanlike practice. In working away the pillars of a thick seam, the breaking of the strata will damage the seam above, if not very far distant; and if productive of gas, that gas will pass up the fractures of the strata and incommode the working of the upper seam. It is, therefore, generally speaking, more advisable to work the upper seams first, provided they be such as will turn out to profit; but it is not uncommon for the lessee (unless otherwise specially restrained) to betake himself to that which is most profitable, leaving futurity to look out for contingencies. But, in other districts of the country, and especially where the strata greatly consist of clunch, soft metals, or other friable strata, the custom prevails of sinking especially to the lowest coal or ironstone first, and successively to work seam after seam upwards, as by that means the partial fracture of the strata drains both coal and stone; whilst the letting down of the strata is done so gradually and progressively, as to do no injury to the coal beds. The working by long-wall also effects the letting down of the superior strata, even more gradually and harmlessly than when, after standing upon pillars, a violent and irregular crop or thrust may occur.

LONG-WALL WORKING.—I will now proceed to describe a few instances of long-wall working, and its consequent effects upon the coal, and the expense of carrying on the works. The most extensive long-wall system with which I have been familiarised was at the Edmondstone and Sheriff Hall Collieries, in the neighbourhood of Edinburgh, in seams of 4 ft. and 5 ft. in thickness, with both good roofs and bad. The mode of conveying the coals being by bearer women. First, a pair of levels were extended from the shafts, with so imperfect a separation wall between them, as to be frequently crushed down. Each of these levels constituted a bearing road, as well as one direct road from the shaft, and at right angles; a solid piece of coal being left round the shaft. The coal was otherwise wholly excavated, beginning in a small centre at the rise of the levels. The bearing roads were pillared up on each side with the strongest parts of the stone which fell from the roof, and the intermediate gob was filled up with the fallen stone, and the smallest portion of the coal, in some cases, riddled. The bearing roads form the air courses, and when the workings become too extensive for the above three roads to accomplish—viz.: 60 or 80 yards—other additional roads were formed, and similarly protected. The wall face was kept open by means of props, ranged at every 3 or 4 ft., and as these props were immediately affected by heavy pressure, as well as stowed up by the packing of the gob, they were either broken or buried amongst the rubbish. Then, with respect to the coal itself. The superincumbent strata being imperfectly sustained by the packing of the gob and the broken props, naturally extended its pressure forward to the solid coal—so that, after being lioled at the bottom, it was, together with the loose stone of the roof, forcibly broken down. If the coal were laminated splinty coal, it came off in long flakes; if soft friable coal, it was ground into small coal; but when the loose stone of the roof was not very abundant, there was a necessity for stowing with the chingle of the valuable coal, so that, although the seam were all excavated, a very serious drawback would be sustained both in the quantity and quality of the coal. The hewers were arranged along this wall face, each man requiring about seven or eight yards, and as there was a necessity for advancing the rows of props as near as possible to the solid coal, there was scarcely room to pass and repass, especially where the coal had been brought down. The danger of this mode of working may be conceived, when an extensive line of holing is going on at the same time, and amidst the necessary noise and confusion, whilst the coal and roof are liable to fall without previous warning. In these gobs, or goaves, carbonic acid gas was continually forming; and as the air which circulated through the roads was exceedingly weak and ill-guided, whenever southerly winds or warm weather prevailed, it was liable to be vitiated by the stithe, so that the candles would not burn, thereby causing the works to be suspended for days or weeks together. It was so far fortunate, that inflammable gas was scarcely ever seen in the district, which I attribute greatly to the open laminated formation of the coal. These passages along the wall face, as also the bearing roads, until the pressure had become quite settled, required constant propping and heavy expense in keeping them open during the night, the rubbish being actually carried out in creels.

[*To be continued in next week's Mining Journal.*]

ON THE PREVENTION OF SMOKE.

At the last monthly meeting of the Polytechnic Society of Liverpool, a most interesting paper was read by CHARLES WYE WILLIAMS, Esq., On the Prevention of Smoke from Steam-Engine and other Furnaces, by chemically insuring Perfect Combustion. We have in our columns for some years past, had frequent occasion to advert to the importance and successful application of Mr. Williams's plan, founded on true chemical principles—the basis of his patent being the admission to the gases escaping from the fuel undergoing combustion, a proper equivalent of air, and that air divided into fine films, or jets, to enable it the more readily to commingle with the escaping carbon and hydrogen, and pass into the atmosphere in an invisible shape. Mr. WILLIAMS commenced his paper, by observing that, as the smoke nuisance had lately occupied so much public attention, there needed no apology for introducing it on that occasion; the enforcing the provisions of the Sanatary Act by the authorities of Liverpool, and compelling the abatement of the nuisance, had given a fresh impulse to the inquiry; several fines had been inflicted, which had given much dissatisfaction to the parties who had to pay the penalties, meetings had been held, and a memorial was presented to the Town Council, complaining of the proceedings, when a sub-committee was appointed to report on the memorial, in which they stated, they felt convinced great leniency had been shown. In the opinion of the memorialists the requirements of the Act appeared to be—that they should "*do their utmost to consume, or prevent, the emission of smoke from their chimneys.*" Without, however, attempting to prove that they had "*used the best practicable means for preventing the nuisance,*" they justified themselves by the sweeping assertion—"that it is a fact freely acknowledged by all intelligent *practical* men, that up to this moment science has not been able to lay down any positive law, nor has experience discovered any certain method, by which this desirable end can be *effectually and universally accomplished.*"

To this Mr. WILLIAMS replied, that the same might be said of any other branch of science which human intelligence brought into action, no method could be perfect, while the operations were proceeded with at random; we daily see ill-adjusted lamps and gas-burners emitting much smoke, but would it be said, that there was no method to prevent it. In the case before him, the whole question turned on the perfect or imperfect combustion, not from the coal or other fuel employed, but from the gases which issue from it in the furnace. In the burners before them, they could see it could be effectually performed, but it was evident that by a little blundering it might also fail in them, as well as in the furnaces, for if they but impeded the progress of air, they at once saw the lamps might be as defective as the furnace. Why, then, it might be asked, should not the same operation be as effective in the furnace as the lamps? The material to be burned—the coal gas—was the same in both case.

Chemistry pointed out the laws of Nature, relative to combustion. It was not sufficient that proper ingredients were provided—they must adopt proper chambers, or vessels, as well as suitable means to obtain the desired results. It was a common observation, that a sufficiency of air would pass upwards through the furnace bars; those who made it could not for one moment reflect. Could they for one moment suppose, that atmospheric air, in sufficient purity, or quantity, could pass through the mass of incandescent fuel, to effect the perfect combustion of the enormous quantity of gas generated in the furnace? It would be as unreasonable to expect that atmospheric air would pass through the lungs of one man in sufficient purity to support life in another.

With respect to the economy of his system, Mr. WILLIAMS stated that, in the *Trafalgar* (the Dublin Company's last new steam-vessel), when handed over by the engineer, the consumption was 38 cwts. of coals per hour; under the process of admitting air to the gases, the consumption was but 25 cwts. for engines of 350-horse power. Again, the emission of a dense volume of black smoke accompanied the vessel during the entire voyage; since then that evil was completely avoided, and the generation of steam considerably increased. Besides, we daily saw proofs of success in land boilers; and why should that which is successful in *one instance* be the reverse in others? Nature was the same in all cases. He referred to two public establishments—the Harrington Water-Works in Soho-street, and the steam-engine furnaces at Edge-hill. In the former case, a very powerful memorial was presented against the chimney. It was altered according to his plan, and no smoke has been since seen from it. At Edge-hill, there was an engine of 100-horse power, with two small unpretending chimneys: yet there was no smoke; there was abundance of steam; and the apparatus was as good as ever, though it had been he knew not how many years in operation.

Mr. WILLIAMS concluded his paper, which was mainly in defence of the Town Council, in the measures they had adopted to rid Liverpool and its neighbourhood from the nuisance, and to show that they had been extremely lenient in the performance of their unpleasant duties—969 notices had been issued that the Act of Parliament would be enforced; 220 informations were lodged for nuisances—out of these 45 summonses were issued; and, out of these, 33 were only fined. This lenity arose from the feeling, that it would be too harsh to put the Act strictly in force in the first instance.

He then proceeded to illustrate his views of the nature of combustion, by diagrams, consisting of thin circular plates, of different colours and sizes, representing the combining proportions of oxygen, hydrogen, carbon, &c., as an atom, a cubic inch, or a pint. Take, said Mr. Williams, a quart, for instance, of hydrogen and a pint of oxygen, mix and raise them to the proper temperature, and they form water; this is combustion; or take one atom of carbon and two of oxygen, raise the temperature to a red-heat, and what is the result?—carbonic acid. The main conditions of combustion of gas were:—1. The quantity of air required.—2. The necessity for mixing it with the air.—3. The required temperature to secure perfect combustion. These are the conditions which must be attended to in the formation of, and conducting the operations in, the furnace, to secure the result desired—the absence of smoke. In the process of combustion of coal, few would imagine the immense mass of water which escapes up the chimney, in the form of high-pressure steam; for every single ton of coals consumed, nearly ½ ton weight of water was formed, as every pound weight of hydrogen from the coal took up 8 lbs. of oxygen from the atmospheric air; and this, in a ton of average coal, gave 960 lbs. of water. It was essential in the construction of a furnace to provide for the escape of this immense mass of water in its highest state of expansion, in addition to a large proportion of carbonic acid and nitrogen. Mr. Williams then alluded to the unscientific mode of making the flame impinge on the boiler, to obtain the greatest heat, when, in fact, it cooled the flame, and made smoke; this he clearly proved by holding a piece of wire-gauze over a clear gas-jet, when a volume of dense smoke arose, from the cooling of the flame by the heat-conducting properties of the metal. He further illustrated the scientific correctness of his principle by numerous diagrams, and explained an ingenious gas-burner, peculiarly adapted for improving the light, by administering a full dose of oxygen to the flame, precisely on his principle of supplying it to the furnace.

A conversation, scientific and animated, followed Mr. Williams's interesting lecture; when the meeting broke up.

NORTH STAFFORDSHIRE RAILWAY.—OPENING OF THE LINE FROM UTTOXETER TO BURTON-ON-TRENT.—A very important portion of this county, rich in attractions, but hitherto shut out, as it were, from the rest of the shire, through the want of public conveyances, has this week been rendered accessible, for purposes of pleasure and business, by the opening of the railway from Uttoxeter to Burton-upon-Trent.—*Staffordshire Advertiser.*

LLOYD'S PATENT BLOWING MACHINES.

[Patent dated March 8, 1848.—Patentee, Geo. Lloyd, of Stepney, ironfounder.—Specification enrolled Sept. 8, 1848.]

The common fanblower consists, as is well-known, of a circular case, with a central hole on each side, for the inflow of air, and an opening in the periphery, through which the air so admitted is expelled. A spindle passes through the central holes, and is supported in suitable bearings at the two ends. On the middle of this spindle is keyed a boss, from which project several arms, to each of which is attached a flat blade, of a square form, which is made as wide as may be without touching the case. Motion is given to the blades by a strap rigger on the spindle, and connected to a steam-engine, or other prime mover. Now, since it is clear that the air which is drawn in at the central hole must always fall short of what is required to fill the larger space, the circumference of which is described by the tips of the blades, it follows, as Mr. Lloyd remarks, "that there must be always more or less of a vacuum formed behind each blade when revolving, and that the air which is condensed in front must rush over the ends and sides of the blades, to fill up the vacuum so formed—causing, no doubt, that disagreeable humming noise which is common to all the ordinary fanblowers, and absorbing a large portion of the power employed for no better purpose than beating the air within the case." The object aimed at, therefore, by Mr. Lloyd, in the first of two machines which he describes, is to effect the complete removal of both these great defects; and this, we think, he has most completely achieved.

Fig. 1.

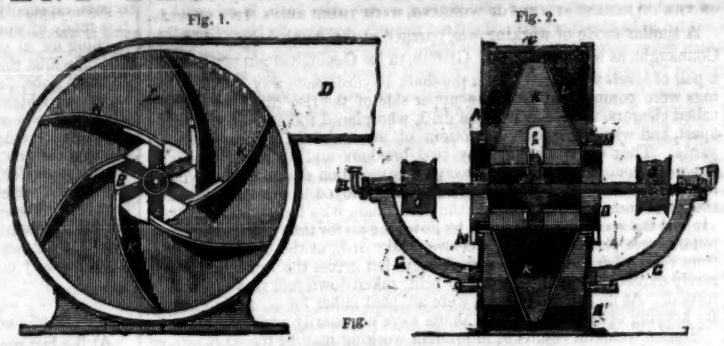


Fig. 2.

Fig. 3.

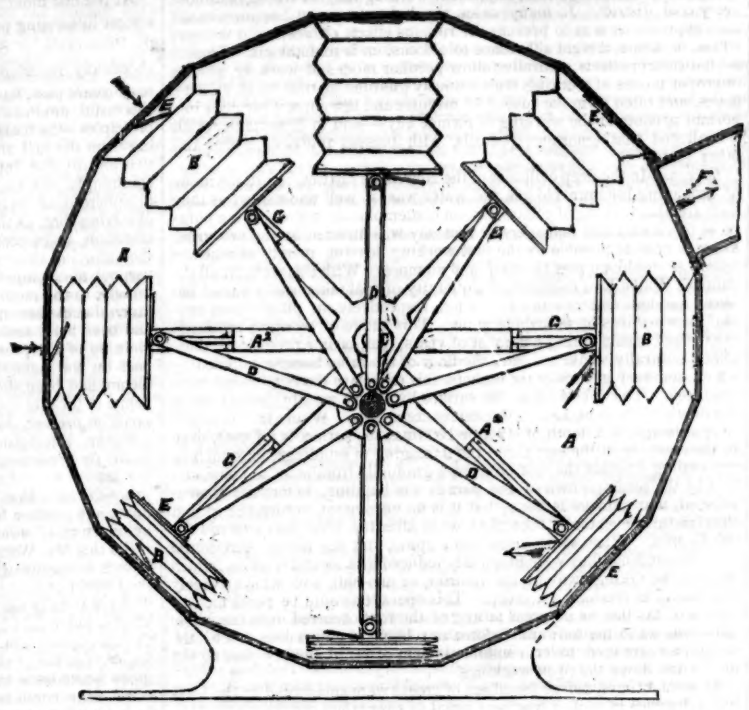


Fig. 4.

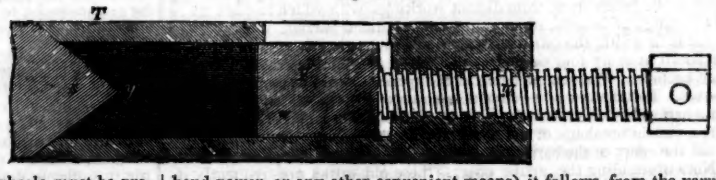


Fig. 1, is a sectional elevation of a fanblower, embodying these improvements; and fig. 2, a transverse section through the centre of the machine. A A, are the side plates, which are made with central openings; B B, as usual. C, the periphery; D, the air discharge pipe; E, a spindle, which passes through the central openings, B B, and terminates in conical ends, which revolve in the bearings, F F. I, is a central boss, keyed on to the spindle, having 6 arms, to which as many blades, K K, are bolted, of a triangular form, and curved, as shown. L, is an inner casing, which encloses the blades, and is of a corresponding triangular section, with openings at the centre and in the periphery, for the admission and escape of air. M M, are two rings, which are screwed on to the outer case, and encircle closely two collars, N N, which are raised on the inner case, one on each side of its central opening, but project a little way beyond the line of the outer one, so that, by means of these rings and collars, the two casings are joined at that part perfectly air-tight. O O, are the strap riggers by which the machine is driven. The air entering the inner case by the central openings, is, by the rotation of the blades, driven out of it, through the openings in the periphery, into the outer case, and is prevented by the converging form of the inner case from reacting upon the blades (as in the common fanblowers), and from the outer case it is expelled by the centrifugal action of the machine through the discharge pipe, D. The flow of the air, even at the greatest velocities, is uniform and steady, free from any back-lash, and almost noiseless. The total area of the openings in the periphery of the inner case must, of course, not exceed the total area of its central openings. When a very great pressure is required to be exerted at the point of omission, the openings in the peripheries of both wheels must be proportionably contracted, even, in some instances, to the extent of one-half the usual size. The blades, when enclosed within an inner case, such as before described, will work well at whatever radial angle they are set; but I have found in practice, that they produce the greatest effect when set back at an angle of about 60°, as represented in the figures. The power of the machine being in an exact ratio with the speed at which it can be driven, it is of importance that the spindle should revolve in its bearings with as little friction, and be kept as cool as possible. One mode of obtaining these objects is represented in the engraving, fig. 2. The spindle bearings, F F, consist of short cylindrical pieces, screw-threaded on the outside, which are screwed fast into eye-holes in brackets, G G, attached to the outside of the outer casing of the blower. On the inner end of each bearing there is a conical socket, *s*, in which one end of the spindle revolves, and from the opposite, or outer, end of that bearing there is a conical hole drilled, till it penetrates, by a very small aperture, the bottom of the socket, *s*. H, is an oil vessel, with a tubular termination, bent at right angles to the body of the vessel, which termination fits into the conical hole in the outer end of the bearing piece. The vessel, H, has an air-tight cap to protect it from the pressure of the atmosphere, so that none of the oil runs out, except when it is drawn out by the rotation of the spindle, and as required for its due lubrication. Another mode of constructing the bearings of the spindles, and which I rather prefer to the preceding, is shown in fig. 4. S, represents one end of the spindle, and T, the bearing in which that end revolves, which consists of a hollow cylinder, bevelled off at the front edges, to suit the conical form of the end of the spindle. The space, *y*, in the cylinder immediately fronting the conical termination of the spindle, is filled with plumbago, which is pressed up against the spindle and into the form of the spindle, by means of a plug, Y, which again is pressed forward by a screw piston, W, turned by hand. The bearing, T, may be upheld by a bracket, in the same way as before described, or in any other suitable manner.

From the preceding description, it will be seen that there are two sources from which a great saving of power may be safely predicated of this machine; first, the narrowness of the blades at their tips, which cannot be less than from one-eighth to one-twelfth of their width at the centre, whence it necessarily follows, that they must offer proportionally less opposition to the escape of the air; and, second, the obstacle which the side plates, or inner case, present to any reflux of the air upon the blades, as in the common fan, which must be attended with a still further, and no inconsiderable, saving of power.

We are told that Mr. Lloyd himself estimates that his machine will do as much work as any common fan with about one-third of the power; and, though we have not tested this estimate by calculation, we incline to think it will be found not far from the truth.

The other blowing machine, described by Mr. Lloyd, is of the bellows sort, and seems well adapted for all cases where a large quantity of air is required to be delivered continuously, and at a nearly uniform pressure.

Fig. 5, is a sectional elevation of this machine. A A, are two cast-iron side frames (one of which only is seen in the figure), consisting each of a polygonal rim of 16 sides and 8 arms, A^2A^2 radiating from a central boss. The rim of each frame presents in its cross section the appearance of a piece of angle iron. C is a spindle, which passes through the centres of both frames, and is cranked in the middle, to nearly the same extent as the side frames are apart. B B, are eight pairs of bellows, of a square form, which are attached by their outer end boards to the periphery of the frame piece, one to every alternate side of the polygon—the boards being laid crosswise, so as to embrace both rims. E E, are the bellows-valves, one being in the inner end board, and the other in the outer. D D, are 16 rods for working the bellows (one-half of which are only seen in the drawing)—there being two rods attached to the inner end board of each bellows, and connected at their opposite, or inner, extremities to a boss, H, on the cranked spindle, C. F, is the general air discharge pipe; G G, are guides, one on the inner face of each arm, to maintain the parallelism of the pairs of bellows when working. The spaces betwixt the arms of the side frames, as also those between the rims in the alternate sides of the polygon, are filled up with wood or sheet-iron, so as to render the entire case perfectly air-tight, except where the valves, E E, and discharge pipe, F, are inserted. A door should, however, be made on each side between the arms, in order to obtain access to the bearings, for the purpose of occasional lubrication. The mode in which this apparatus works is as follows:—When the cranked spindle, C, is turned (which may be done by hand power, or any other convenient means), it follows, from the varying position of the centre boss, to which the working rods, D D, are attached, that there must, in every stage of the revolution of the spindle, be some of the pairs of bellows fully distended, others only partially so, and some quite collapsed (as exemplified in the figure), but that each bellows must in succession be once distended and collapsed; that is, make one complete stroke. The number of pairs of bellows used may be increased or diminished, according to the amount of blast required.—*Mechanics' Magazine.*

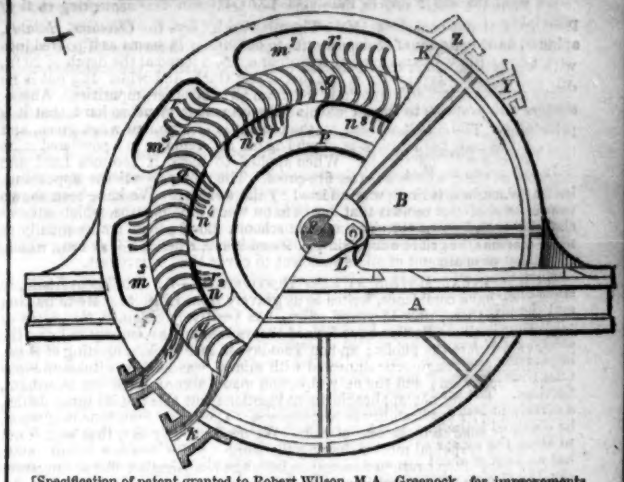
NEW METHOD OF CUTTING TRENCHES FOR DRAIN TILES.

A thorough system of drainage is universally known, and generally acknowledged to be one, at least, of sufficient importance to render it worthy of strict attention, if not the most advantageous, of all preliminary agricultural operations; yet, while the wealthy farmers, or owners of improving lands, adopt the system to some extent, the small tiller of the soil continually finds it much deteriorated for want of the desirable appliance—drain tiles, or pipes—which from the cost, not of the pipes themselves, but of the labour required to dig the trenches when it is necessary to lay them any depth in the earth, prevents that extent of drainage which would prove profitable. Any method, therefore, which would considerably reduce the expenditure within reasonable limits, would confer a great boon on the agriculturist, and enable both wealthy and poor greatly to extend this necessary operation. Such a machine has been perfected by Mr. James White, C.E., of Kennington-road, and is for the purpose of slicing out the earth, of just sufficient width for the admission of the pipes, instead of the unnecessary and expensive plan at present, from necessity, in use, of digging a trench large enough for the men to work in, perhaps, 2 ft. broad, when it may require only a 4-in., or, at most, a 6-in. drain. The machine consists of two large wrought-iron wheels, of any required diameter, 1½ in. thick at the centre for 12 in. diameter, then tapering to a knife edge, which is to be hardened steel. These are fitted in a frame, immediately behind the other, but sideways, such a distance apart as to suit the diameter of the pipe intended to be employed. They turn, however, rather closer at bottom than at the top, in order to render the cut of a tapering form smallest at bottom, for the more ready removal of the earth. The implement is drawn by horse-power backwards and forwards, in the direction of the cutting, until the necessary depth is required. As these knife-wheels would cut much better, by having a jet of water dripping upon the earth to be cut, a cistern is proposed to be carried upon the frame.

To give increased—indeed, double—power to the horses, when the friction would be very great, a small anchor is to be fixed in the ground, at any distance, for a single piece of cutting—a rope from which would pass through a pulley on the machine, and the horses pull from that end of the rope; the earth is afterwards removed by a peculiar plough. Supposing the implement to travel at the rate of 1½ mile per hour, and that it had to pass over the ground three times to produce the required depth, and that the distance between the drains is 30 ft., in 10 hours it would cut 18 acres. Presuming that this might be effected by four horses and two men, and raising the earth by ploughs to require similar labour, the expense would be vastly less than the present usual cost. Should such an instrument in practice remove only one-half less earth than by the present system, it would have reached, we think, all that perfection, as far as preparing the ground for receiving the pipes of which it is is capable.

ICE IN THE HOT ASHES OF MOUNT ETNA.—The main crater is about 500 feet deep at this time (so say the guides); but I think this must be measured down the slope of the funnel. I could not, however, see to the bottom, owing to volleys of sulphurous smoke whirling up ever and anon, accompanied by a rumbling noise, and occasionally by a slight vibration of the ground underfoot. Here I found, amid warm ashes, on the slope of the crater within, heavy crystals of ice set all at one angle, and curved like sharks' teeth. I picked up one bit as big as a walnut, and asked the guide if he could account for its presence. Far be it from him to give a "rationale" of anything of the sort; it would derogate from the dignity of Etna. It reminded me of a chemical experiment played off by a French *savant* at one of the late "Scienziati" meetings. He made water freeze in a red-hot cup. The silver of platina being brought to a red heat, a few drops of water are thrown in, which do not evaporate, but jump about. Sulphuric acid is now poured in, which in the act of boiling produces so intense a cold by the disengagement of its latent heat, that the drop of water at once turns to ice. I opine the chemical process here to be the same, only on Nature's grand scale. The morning mists supply the moisture, and within the crater there is no lack of sulphurous mixture, boiling as in a retort; hence as hot fumes ascend, the crystals of ice are precipitated. If any one rejects this solution of mine, let them find a better, remembering that they are to account for pieces of ice forming on a bed of warm ashes. This principle of "disengagement of latent heat" may also help to account for the severity of the cold felt on Etna, which is far greater than is due to its elevation.—*Francis's Notes on Italy and Sicily.*

EXPANSIVE ROTARY STEAM-ENGINE.



[Specification of patent granted to Robert Wilson, M.A., Greenock, for improvements in certain kinds of rotary steam-engines, part of which improvements are applicable to rotary engines worked by water or by the wind; also an improvement in safety-valves for steam-boilers.]

The chief object of this invention is to introduce the principle of working steam expansively in rotary engines. This is proposed to be effected by causing the steam which has first acted by impact in one direction against the vanes of a wheel, to operate again by reaction in opposite directions in issuing out of the intervals between the vanes. The figure represents a side elevation of an engine constructed according to this part of the invention, and having one-half of the cover or side removed, in order to exhibit the internal construction. The circular case is rendered steam-tight, and has an entrance-passage at I for the steam. There is also an eduction passage at K, through which the steam, in an expanded state, is allowed to pass away into the air, or else into a condenser; and, although the induction passage, *k*, appears very near to the entrance passage, I, yet the steam does not pass directly to K, but passes nearly all round within the case, in order to impel the vanes, *g g*, by acting over and over again, with more and more expansive action, at several different places around, within the circumference of the case, in succession, before the steam arrives in a very expanded state at the eduction passage, K. In addition to the curved vanes, *g g*, there are other curved vanes, *r r*, fixed within chambers, *n n*, which the patentee calls reversing chambers, and which, with the said fixed vanes, are for giving to the current of steam the directions in which it is to act over and over again against and between the curved vanes, *g g*, of the wheel. Some of the reversing chambers are disposed in an outer circle, *m m*, which are also furnished with stationary vanes, *r r*; the moving vanes, *g g*, therefore, revolve between two separate circles of fixed vanes. All these vanes being truly arranged in their several circular rows, with the edges of the vanes in conformity therewith, the interior edges of the fixed vanes in *m m*, and the exterior edges of the vanes, *r r*, in the chambers *n n*, are close to the edges of the moving vanes, *g g*; but at no part of its circumference is it allowed to touch or come in contact with the fixed vanes, *r r*. In order to give firmness to the vanes, which are made of thin metal plate, they are united by means of flat circular rings, which are as close as possible to the moving parts without actually touching. The effect of these rings is not only to strengthen the vanes, but also to subdivide the whole of the passages into narrow semicircular courses, in order to direct the currents of steam. The steam from the boiler enters the case at I, and is first directed into a curved course at *m*, which is divided into three spaces, in order to compel the steam to proceed in three currents towards the axis of the wheel; but, owing to the curvature of the vanes, the three currents of steam, when they are passing out from those spaces, are caused to assume nearly the direction of tangents to the semicircular curvature of the moving vanes, *g g*, against which the steam will first make its impact, by acting against the concave sides, which deflect or turn the course of the steam which now issues from the spaces between the vanes, *g g*, at the interior circumference, and is received into the chamber, n^2, when the direction again becomes reversed owing to the semicircular curvature of the boundary of that chamber, so that the steam will be turned towards the vanes, *g g*, proceeding in a tangential direction to the wheel in order to act again on the vanes, *g g*, by impact. The steam permitted to expand whilst in the reversing chamber, n^2, in its second impact will, therefore, be in an expanded state, and will enter into a greater number of spaces between the vanes, *g g*, exerting a reaction in so issuing, when it is again received into another reversing chamber, m^3, wherein the steam is still further expanded, and becomes again reversed in its direction to the chamber, m^3, from which it passes as before to chamber n^4, where it is still further expanded, reversed, and divided into numerous streams, continuing a similar course through the different chambers, m^5, n^6, m^7, n^8, and so on throughout the circumference, being proportionately expanded in each chamber, till at last it escapes through the eduction passage, K. By the continual impact and reaction of the steam, a rapid rotary motion is communicated to the wheel.

Another part of this invention relates to improvements in rotary engines of impact, the object of which being to combine together two revolving wheels, having curved vanes affixed to the wheels, in circular rows in a very similar manner to the vanes, *g g*, already described, but the circular row of vanes is larger than on the other wheel, so that one circular row is surrounded by the other. These two wheels are inclosed within a case, the vanes in the one being reversed to that of the other. The current of steam which has passed through the curved spaces between the vanes of one wheel, and has changed its direction in so doing, will enter into the curved spaces between the vanes of the other wheel; and the steam, in so doing, will act by impact and reaction to turn both wheels round, but in contrary directions of rotation. The fourth improvement relates to rotary engines to be worked by water or wind, the mode of action being by impact and by reaction. They are arranged in a similar manner to the last described. The fifth and last part of these improvements relates to safety-valves for steam-boilers, which the patentee constructs with columns of mercury contained with a cluster of numerous tubes of iron or glass, disposed side by side, the passages through which tubes are kept effectually stopped, by having the orifices at the lower ends immersed to different levels beneath the surface of mercury, contained in a cistern to which the steam has admission. The mercury will effectually prevent any escape of steam, so long as the pressure is no greater than intended. But if the pressure of the steam depress the level of the mercury below the lower end of one of the tubes, then the steam will force its way up that tube; and if the steam still increases in pressure, the surface is depressed still lower, so as to get below the level of the lower end of another tube, and so on; more of the tubes will become opened, one after another, as the pressure may require.—*Civil Engineer and Architect's Journal.*

THE RAILWAY SYSTEM.—A paper by Mr. W. Harding, manager of the Glasgow and Greenock Railway, was read at the last meeting of the British Association, which affords some interesting particulars of the working of the railway system. It appears by his statements, that in 1842, the average receipts per mile were 2489*l.*, and in 1847, 2596*l.*; that the length of railway open in Great Britain, including Wales, was in the former year 1990 miles, and the gross receipts of traffic 4,740,000*l.*; whereas, in 1847, the miles open where 3597, and the gross amount of traffic 8,366,772*l.* The receipts, therefore, were about doubled, upon a less proportionate amount of mileage, a circumstance which would tend to give confidence, as regards the prospect for the great additional lengths of railway, for which Acts have been passed. The length of railway sanctioned by Parliament, up to the beginning of the present year, but not opened, was 7150 miles, a considerable portion of which is in more or less rapid progress. On the 1st of May, 1847, 5209 miles were in progress, on which 215,792 persons were at work. It is calculated that within the next five years there will be upwards of 10,000 miles of railway open in Great Britain, which will give permanent employment, at good wages, to upwards of 140,000 persons, representing about 720,000 of gross population, taking five to a family. When it is considered that there are about 4000 miles of canals, and about 30,000 miles of turnpike road in the kingdom, this 10,000 miles of railway in addition, is an accession of vast importance to our internal communication.

BOILER EXPLOSIONS.

We went the other day to Bankfield Mills, Heaton Norris, to inspect the principle and working of an apparatus patented by Mr. E. Walmsley, cotton-spinner, for the purpose of preventing the possibility of those dreadful accidents, with loss of life, which have occurred in different parts of the manufacturing districts, from explosions of steam-boilers. The apparatus in question is very simple, and proves what great objects may be gained by attention to general principles. The simplicity and inexpensive nature of Mr. Walmsley's invention was very pleasing, as well as its applicability to every description of boilers.

It appears to us, that all that is required for the safety of a steam generating boiler for manufacturing purposes is—1. That the ordinary working pressure of the steam shall not be exceeded.—2. That when the boiler is short of water it shall be cooled down.—3. The means to obtain the desired end shall be, not mere alarums, but self-acting, simple, inexpensive, convenient, and not liable to get out of order.

Now, there are already various means applied for the prevention of explosions of steam-boilers; those most prevalent being the ordinary safety-valve, and the priming, or register-pipe. But there wants something more to accomplish the end in view, and, no doubt, the general belief in the efficacy of the safety-valve has prevented that attention being paid to the subject which its importance demands. Mr. W. has for some time been aware of the fatal mistake thus innocently made, and the present apparatus is the result of his reflections. The safety-valve is intended to prevent the steam from rising above a certain pressure, and is weighted accordingly; here the desired effect would be obtained if the disc of the valve were to rise from its seat sufficiently high to allow the escape of the superabundant steam. For instance, a 4-inch valve has an area of about 12½ square inches, and will allow to pass in a given time, say 12½ cubic inches of steam, The circumference being also about 12½ in., it is evident that the disc must rise 1 in. to permit the escape of 12½ cubic in. of steam within the same time. Such a circumstance was never known, and here the deficiency of the common system of safety-valve will become manifest. It would require a much greater pressure than the ordinary working one to lift it merely ⅛th of an inch. So that this circumstance causes the safety-valve, as at present employed, to be really of very little beneficial use; on the contrary, it is unquestionably very mischievous in its tendency, by lulling the master, manager, engineer, and fireman into a pleasing, but deceptive and dangerous, sense of security. To this great point the attention of millowners and occupiers cannot be too seriously directed.

Then, in order, comes the priming, or register-pipe, which is intended to act when the boiler becomes short of water, by allowing the escape of steam, thus giving warning of danger. If not too long, it will also act by boiling over when the steam gets too high; but, notwithstanding, it is found to be a great nuisance, from its continuing to boil over long after the engineer has lowered the steam to the ordinary pressure. In most instances the boiler has to be cleared of steam before the nuisance will cease, thus occasioning a loss of time, a loss of coal, and much annoyance, besides unnecessarily robbing the boiler of its water. On this account, it need not be wondered that both masters and men are agreed not to use it in the latter capacity, but simply as an alarm when the boiler becomes short of water. Now all these defects Mr. Walmsley's apparatus effectually remedies. The unnecessary consumption of coal and waste of boiling water are prevented, and the steam escapement is effected in the most economical manner, at the moment danger is to be apprehended, whether the engineer be absent or on the spot. A safety-valve is weighted as usual, but with its lever prolonged on the opposite side of the fulcrum, or bucket, having a dribbling hole, and a small tail valve being suspended from the end of the lever. A pipe communicated with the ordinary priming, or feed pipe; and when the steam gets beyond a certain height, about a quart of water is discharged into the bucket, which, by means of the lever, raises the valve, and allows the steam to escape through a large pipe outside the building, whilst a cold-air damper is opened, and the fire is cooled, until the steam has settled down to its ordinary pressure. The valve then closes, and the boiler resumes it regular functions, without any confusion or disarrangement. Should the water in the boiler become too low, the cold-air damper again comes into action, and prevents injury to the boiler from the over-heating of the flues. It is the most complete and inexpensive invention for the purpose that can possibly be conceived, and one to which every millowner, we repeat, ought to direct his earnest and immediate attention.—*Stockport Advertiser.*

SPEED AND POWER ON THE NARROW GAUGE.

Within the last month several new and powerful engines have been put upon the London and North-Western and Midland Railways. The most powerful was placed upon the former line on Saturday last, when we had an opportunity of taking a run with it from Wolverton to Tring, in company with the patentee Mr. Crampton, and Mr. Braidwood, the locomotive foreman of the former station. The new engines are five in number, but we have witnessed the working of two of them only—the powerful one built after Mr. Crampton's patent, and another on the long boiler and outside principle, after Mr. Stephenson's patent. The three others are a powerful class of six-wheel engines, with a 6-ft. driving-wheel, and a somewhat less powerful four-wheel locomotive, both built by Bury and Kennedy, of Liverpool, and a 6-ft. 6-in. driving-wheel, *Jenny Lind*, constructed by Wilson, of Leeds. We do not know either the size of the cylinders or the heating surface of Bury's engines. We believe the four-wheel one has about 1000 ft. of heating surface, and a 16-in. cylinder; and that its weight, in working order, is about 20 tons. Wilson's *Jenny Lind* has, we think, also a 16-in. cylinder, with 1000 ft of heating surface. What its weight is we do not know. Mr. Stephenson's new engine has eight wheels, with a 7-ft. driving-wheel. The cylinder is 18 in., and the heating surface 1200 ft. The weight of the engine, in working order, is between 32 and 33 tons. Mr. Crampton's new engine, the *Liverpool*, has eight wheels, with an 8-ft. driving-wheel. It has an 18-in. cylinder, a 24-in. stroke, and about 2000 ft. of heating surface. Its weight, in working order, is about 34 or 35 tons.

The work of the eight-wheel engine of Stephenson is not superior to the performances of the *Jenny Lind*, 6-ft. driving-wheel engine, with 100 tons, between Derby and Masborough. That class of *Jenny Lind* has only about 800 ft. of heating surface, and a 15 or 16-in. cylinder, and weighs, road worthy, 24 tons. She took 100 tons at an average speed of 42 or 43 miles per hour, up 16 ft. per mile. Stephenson's 35-ton engine cannot do better work. She has not sufficient steam for her large cylinder, which should be reduced to 16 in.

Mr. Crampton has followed the example of his able friend, Mr. D. Gooch, of the Great Western. He has proportioned his heating surface to his 18-in. cylinder. The *Liverpool* has precisely the amount of heating surface that has been given to the 8-wheel broad-gauge engines—viz.: 2000 ft., every portion of which is necessary to work the 18-in. cylinder of a passenger engine, at a proper and economical pressure. Mr. Gooch's plan of working the leading and second pair of wheels upon one spring on either side, in order to meet, in the best possible way, any inequalities on the road, has also been adopted by Mr. Crampton. Upon these two pairs of wheels the latter has placed 16 tons, or 4 tons to each wheel; 3 tons are given to each of the third pair of wheels, and 6 tons to each of the trailing, which, in Mr. Crampton's engines, are the driving wheels; and, as the axle of the leading wheel is placed close up against the smoke-box, and the axle of the driving-wheel is behind the fire-box, there is practically no driving-wheel fulcrum in the centre, or any overhanging weight at either end, to produce or promote oscillation. The only disputable point on the question of oscillation is, whether the outside cylinder does not necessarily, as some engineers think, occasion it. As far as we have been able to judge, from a careful personal examination of the brasses and working of the *London*, one of the class of outside cylinders of which we are speaking (Crampton's), oscillation does not necessarily attach to the working of all outside cylinder locomotives. We have at all times found the *London* steady. Shortly after she was put upon the London and North-Western line, she was steady at 62 miles an hour, and we found her steady at the highest velocity she reached (67 miles per hour), after she had been running some 20,000 miles.

The *Liverpool* is also extremely steady, and works beautifully. In saying this, we must in justice to the manufacturer say, that we never saw a better made engine turned out of any locomotive shop in England. In the trip that was made with the *Liverpool* on Saturday, a high rate of speed was not attempted. The run was with the tender only, to see how she worked. At 40 miles an hour, the maximum velocity, the motion on the portion of the framing abreast of the leading-wheel was perfectly free from oscillation.

What speed the *Liverpool* can attain and maintain with 100 tons, we shall not venture to predict, but we are quite sure that she will far surpass anything that has yet been done upon the narrow gauge. Her extreme height from the rails is 7 ft. 8 in. only, and with longitudinal sleepers, and carriages with longer bearings and larger wheels than are adopted on the London and North-Western Railway, the *Liverpool* ought to take a train of 16 carriages from London to Birmingham in 2 hours and 10 minutes, including two stoppages; and with the present carriages and cross sleepers, she should, and might safely, take such a train from Euston-square, up the inclines, to Tring—namely, 31¾ miles, in 35 or 36 minutes, or down the inclines, from Tring to Euston-square, in 32 or 33 minutes.—*Morning Herald.*

The same paper of this morning says:—"We had a trip, yesterday, to Birmingham and back, with the new and powerful engine, the *Liverpool*, which has the same sized driving-wheel, the same sized cylinder, the same length of stroke, and the same amount of heating surface that have been given to the most recently-constructed passenger locomotives upon the broad gauge. The *Liverpool* was, when running with the tender, perfectly steady at 60 miles an hour. The engine is not yet in perfect working order; she will be so in a few days, and we shall then give an accurate and detailed report of her speed and power, upon which many important and debateable railway questions are considered to depend."

COLONISATION OF BRITISH NORTH AMERICA.

A thorough and well-defined system of emigration, with a view to the establishment of colonisation, on a permanent and productive basis, is universally admitted to be the most legitimate, if not the only, panacea for the evils under which this country, and particularly Ireland, are now groaning. Hitherto emigration has been encouraged by Government without any system, and has been little more than a transportation of thousands of poor wretches from their native shores, in pestilential and crazy vessels, either to meet death amid the horrors of shipwreck, or by lingering starvation in remote regions. To carry out really useful colonisation, a system of emigration must be adopted, holding out facilities for profitably accommodating and employing those families who emigrate—securing them the means of immediate subsistence, and offering that encouragement to industry which will encourage them to labour, and look forward to independence.

In a pamphlet on this engrossing subject, by Mr. Bridges, he takes into consideration—1. A national system of education.—2. The opening up of colonial fields, and the connections of colonial markets and centres of population by that modern band of society—the railway.—3. The physical preparation of the chosen sites of settlements, by clearances, surveys, mills, roads, and bridges.—4. The moral and sanatory adaptation of these settlements to the purposes of civilised life, upon the basis of municipal government.—5. The convenient recovery of the necessary outlay, from the railway traffic, and enhanced value of the land.—6. The creation of the ways and means, on the security of the property thus constituted.

These several points are ably discussed; and if, instead of the present loose and ill-defined practice of sending our population off by hundreds, to seek a home where chance may lead, some such well-considered scheme, as advised by the author, were adopted, our own homesteads would be eased of a superabundant population, and our colonies strengthened by increasing thousands—bound to the mother country by the closest ties of consanguinity and good feeling. The pamphlet contains a copy of a letter from Capt. J. M. Laws to Earl Fitzwilliam, in which he recommends a system of finance and railway, in every detail most admirably adapted to meet the subject of emigration to our North American Colonies—the Canadas, New Brunswick, and Newfoundland—he recommends—

1. That the revenues and property, and the faith and credit of the three provinces be pledged to the State, for the annual interest upon five millions of Exchequer-bills, to be issued by the British Government for the immediate railway connection of Halifax, Windsor, and Margaretville; St. John, St. Andrews, Woodstock, Grand Falls, and Quebec; or 500 miles of railway, at 10,000*l.* per mile, including three first-class steamers, for crossing the Bay of Fundy.

2. That such railways, constructed under the superintendence of the Government, be rented and managed in sections, by private enterprise; the provinces being pledged as above, to make up the interest to 4 per cent., in the proportion of—

Canada, on	£3,000,000
New Brunswick	1,200,000
Nova Scotia	800,000
Total	£5,000,000

3. The advances to be spread over a period of five years, or at the rate of one million per annum, and to be redeemed in 15 years—the Imperial Government being the first mortgagees for the capital amount, and the provincial Governments the second mortgagees for the amount of interest they may have severally been called upon to contribute.

4. That the colonies be bound to give immediate employment and shelter to 30 able-bodied men and their families per mile of railway, equal to 150 souls per mile, or to a population of 75,000 for the whole distance; this number to be made up to 200,000 within a limited period.

By this scheme the Government would not be called on for one farthing of money, and the railway and increased value of the land would be ample security for the payment of interest, and repayment of the principal in 15 years. The obvious benefit to the commercial interests of this country would be, the tying together the three provinces of British North America—opening up a daily communication between Halifax and Quebec; and, during the winter months, making every part of Nova Scotia and the Bay of Fundy equally available for the reception and subsequent transport of the mails. That the employment likely to be afforded is rather understated may appear from this—that the North-Western Railway Company actually expend at this moment upwards of a million a year in rates and wages; and that no less than 16,000 men are employed from day to day on the portion of the Great Northern now in progress of construction. It is to be remembered also, that the national territory opened up for settlement by means of the proposed railways, will ensure a permanency and expansion of reproductive employment, which is not necessarily involved in the formation of a railway at home. He also adverts to the fact, that at least one-half of the sum proposed to be expended would be required for the iron to be used in the works—thus at once creating a market for two millions and a half of British manufacture.

ST. ANDREWS AND QUEBEC RAILWAY.

The following letter has been received by the directors from the Colonial-office, respecting their undertaking:—

Downing-street, Sept. 18.—Sir,—Referring to what passed at the interview which Lord Grey granted to the deputation from the board of directors of the St. Andrews and Quebec Railroad, on the 14th inst., I am directed by his lordship to inform you, that whilst it is out of the power of her Majesty's Government, without the authority of Parliament, to grant to the promoters of that undertaking any pecuniary assistance, either directly or indirectly, and although his lordship cannot encourage the expectation that, even when Parliament re-assembles, her Majesty's Government would feel themselves justified in recommending that such assistance should be granted, since, by doing so, applications of the same nature from the various British colonies would be encouraged to an indefinite amount, he has great pleasure in so far complying with the request made to him by the deputation, as to communicate to you in writing the opinion he has formed of the undertaking. I am, accordingly, directed to inform you that, in Lord Grey's judgment, the projected railway has been judiciously planned, and is likely, if completed, to prove of great national importance; and also that there appears to him to be no reasonable ground for doubting that the resources of New Brunswick are far more than sufficient to enable that province to fulfil the guarantee given by the Legislature for payment of the interest on the capital of the company; or that both the Legislature and the people of the province will respect the engagements into which they have entered. Lord Grey considers the inhabitants of British America to be entitled, by all their past conduct, to be relied upon for a punctual discharge of the obligations which they have contracted.

This must, however, be regarded merely as an expression of Lord Grey's opinion, and it must be distinctly understood, by those persons in this country who may take shares in this undertaking, that her Majesty's Government cannot become, in any degree, responsible for the fulfilment of the expectations by which they have been induced to do so.

W. Bridges, Esq. I am, Sir, yours, &c., HERMAN MERIVALE.

THE ELECTRIC TELEGRAPH—IMMROVED MODES OF INSULATION.—Mr. J. H. Hammerton, superintendent of the Electric Telegraph Company, has addressed the following letter to the *Mechanics' Magazine*:—"As the advantages of the electric telegraph are daily becoming better understood, it is probable this mode of communication may ultimately be extended to most of the principle towns in the kingdom; whatever, therefore, tends to improve the means of transmitting signals by the aid of electricity is likely to be beneficial to the public, as well as to the Electric Telegraph Company. The most serious obstacle to the transmission of signals by electric action is the want of perfect insulation. I beg to submit the following plan, as better adapted to obtain the desired object than any hitherto attempted. As a substitute for the earthenware cones, at present in use, for suspending the wires to the poles, I propose screwing on to the pole a piece of 1½-inch or other convenient sized batten of the required length; gutta percha tubes, 12 or 14 inches long, and widened into a lip at the extremities, are then strung upon the wires, and attached to the poles by a plate of zinc, shaped to the form of the cubes. At the winding posts the bolt of the ratchet-wheel for tightening the wires is insulated by earthenware collars; I have used collars of similar form made of gutta percha, having a disk of hard wood interposed between the shoulders of the bolt and the collar, to take off some part of the strain. This plan has been perfectly successful. In towns, it is necessary to lay the conducting wires under the streets; for this purpose they are placed in leaden tubes, which are enclosed in iron pipes, but the insulation is very defective. I propose to have any number of copper wires, covered individually with a tube of gutta percha fitting close to the wire, and either with or without a join along the sides; the latter, though rather more expensive, is doubtless the best plan. These several wires are then either bound together with a band of gutta percha, or enclosed in a tube or solid mass of the same material, which is placed in common gas pipes, and laid down under the pavement in the streets, or may be used in tunnels, or other places where it is inconvenient to have open wires. I have submitted wires covered in the manner just described to the severest test, with perfect success. After keeping them in water many days, I have sent a current of electricity along them generated by 288 pairs of plates. I have used 24 cells of Grove's battery for the like purpose, and used the most delicate galvanometer to detect any contact between the wires, but the insulation has, in every instance, proved to be perfect. Each of the modes of insulation above described has the further advantage of being considerably cheaper than any at present in use. I enclose a diagram of the mode of insulation in the poles." [In the *Mechanics' Magazine* of this day, Mr. Francis Whishaw states, in a communication to the editor, that the Gutta Percha Company have successfully adopted several plans for insulating telegraphic wires by gutta percha, similarly to the above; and that he exhibited a specimen at the meeting of the British Association.—Mr. Baddeley claims for Mr. Bain, who is now in America, that he used it for the same purpose six months since; and a statement also appears from "Z. U.," to the effect that this substance was employed by Mr. Physick, the Telegraph Company's engineer, in February last, in the Kilsby, Leighton, Watford, and Kensal Green tunnels, and has proved perfectly successful. The following is from Mr. Baddeley's letter:—"Mr. Hammerton *now proposes* to cover the wire with gutta percha, fitting close to the wire, 'either with or without a join along the sides; the latter, though rather more expensive, being doubtless the best plan.' By Mr. Bain's process, I believe the latter plan is not more expensive than the other. If I remember rightly, Mr. Bain at the same time told me, that the fitness of gutta percha, as an insulating medium, had occurred to man different persons."]

TREDGOLD ON THE STEAM-ENGINE.—A new and much-extended edition of that well-known and highly appreciated treatise, Tredgold's national work on the steam-engine, is being issued in parts by Mr. Weale, of Holborn, whose name is associated with publications on scientific subjects, in all their various branches. Tredgold's Treatise shows the progressive and present state of improvement in the steam-engine in divisions, practically and amply elucidating in every detail its modifications and applications, its duties and consumption of fuel, with an investigation of its principles and the proportions of its parts for efficiency and strength. In the first division is included locomotive engines for railways, the first part of which contains a complete set of rules and regulations for the practical management of a locomotive engine, and for the guidance of engine-drivers. The second division will treat of marine engines for sea, river, and canal service, with the construction of steam-vessels—a work which will be eagerly sought after, most especially by officers of the Royal navy. The third division is to afford examples of stationary engines for all kinds of manufacturing purposes.—4th. Engines employed in mines for raising water, or for supplying towns with water.—5th The Cornish pumping engine and its several effective duties—6th Engines for mill work, flour mills, &c.—and 7th. High-pressure and non-condensing engines, foreign and English. The wide distribution of a work embracing the above extensive range of the application of the steam-engine, cannot fail to produce a great national benefit; for it will not for one moment be doubted that, in proportion as the practical knowledge of the working and uses of the steam-engine is acquired, so will the condition of mankind be ameliorated, improved, and fertilised.

PROPELLING SHIPS.—Captain Carpenter, R.N., who for some years past has directed his attention to screw-propelling machinery, has recently completed a new model, showing the application of what he terms quarter propellers, as the motive-power of steam-vessels. In his description, Capt. Carpenter says—"The series of past experiments, and those which are in daily progress, in the application of steam machinery and screw to vessels of war, have fully evolved the merits of this novel power of propulsion, and established its superiority over paddle-wheels. What has thus been attempted step by step, has elicited information, forming data for working out another principle of motion, which, when perfected in its application on a large scale will, we believe, lead to results of a yet more satisfactory and important character. The position selected for the propellers as they appear on this model is taken from that type offered by the unerring hand of Nature, since we see the power of propulsion, there applied, in the aquatic tribes of birds of the *auk* species. The boat-like form of body, mere rudimental wings, short and remote legs, scale-like plumage, all alike concurring to fit them for dwelling only on the ocean. Their velocity of movement on the surface of the waters is well known, and hitherto nothing has surpassed it. Length of model, from figure-head to taffrail, 4 ft. 8½ in.; draught of water aft, 3½ in.; ditto forward, 3 in.; weight, with machinery on board, 23 lbs.; diameter of propeller, 2 in.; scale, ⅜ in. to a foot. Three shafts are placed, horizontal and parallel with each other, and connected with the machinery leading to the motive power—so that a single propeller in the dead wood, or the 'quarter propellers,' may be worked either separately or together." The captain has also a novel plan of raising the propellers out of the water, and a new adjustment of the stern-bearing.

LAUNCH OF A STEAM-VESSEL IN THE THAMES FOR SERVICE IN SCOTLAND.—A very handsome built iron boat was launched, on Saturday last, from the building-yard of Miller, Ravenhill, and Co., Orchard Wharf, Blackwall. This is the third vessel turned out by the above firm for the Edinburgh and Northern Railway Company; the two former vessels being known as the *Auld Reekie*, and *Thane of Fife*. The new craft is expressly adapted for the passage across the Firth of Forth, and will have a speed superior to the former squadron. She was christened the *Express*, and will be furnished with a pair of oscillating engines of 120-horse power, with feathering wheels, tubular boilers, &c., which are now erecting on board. Her length is 150 ft. between her perpendiculars; breadth, 148 feet at load line; depth, 11 feet; draught of water, 6 feet. It is highly creditable to the Thames building and engine making, and more especially to the individual merit of the enterprising firm of Miller, Ravenhill, and Co., to find Thames steamers ordered for service in the north. It is no less creditable to the company, who, holding speed to be a paramount object, had the discrimination to make sure of it by ordering their vessels from the celebrated firms of the south.

STEAM-VESSEL ON A NEW PRINCIPLE.—The *Alleghany*, U.S. steamer, which sailed from Rio on 27th June for the River Plate, is upon a new principle, the invention of Capt. Hunter. Her wheels work horizontally, 7 ft. below surface of water, within the vessel, near the midship section; and the vessel's sides are entirely shut up, when under canvass alone, by a slide which is dropped within her. The object desired to be obtained by the plan exhibited in the *Alleghany* is the full use of canvass without steam-power, efficient use of steam-power independent of the canvass, a combination of the two powers of sailing and steaming, and the boilers, engine, machinery, and propellers, being secure from the effect of shot by means of a shield deck, patented by the captain, and the whole being below the water line. Thus the power of steam is sought to be adapted to vessels intended to form the line of battle, and the cheaper moving power of the wind is left as effective as though she were not a steamer. She is built of iron, and her funnel can be lowered to the deck, as it falls on a hinge and goes into a bed of wood prepared for it; it is telescopic. She is barque rigged; length of spar deck, 185 ft.; extreme breadth, 34 ft.; depth of hold, 20 ft.; armament, two pivot guns; pierced for, and will carry, six long 32-pounders; two cylinders of 60-in. diameter, 4-ft. stroke, placed horizontally, one attached to each propeller; fire service of boiler, 4000 ft. Her builder is quite sanguine of success.

BRITISH AND AMERICAN STEAM-SHIPS.—Every succeeding trial proves the great superiority of British over American steam-vessels. The *Britannia* brings intelligence of another decided victory. The British and North American Royal Mail steam-ship, *Niagara*, which sailed hence on the 19th ult., reached New York in 12 days and 9 hours. The American steamer, *Washington*, which sailed from Cowes on the 20th ult., was only telegraphed off New York on the 6th inst., having been 17 days at sea—the *Niagara* thus beating her five days, not taking into account the detention at Halifax.—*Liverpool Mercury*, last night.

THE FIRST MARINE STEAM-ENGINES BUILT IN BOLTON.—The first pair of marine steam-engines, built in Bolton, were constructed by Messrs. Benjamin Hick and Son, for the *Affonso*, Brazilian war steamer, which has obtained such honourable notoriety by the services it rendered to the passengers and crew of the *Ocean Monarch*. These engines are made on the direct-acting principle, are 300-horse power, and several improvements have been introduced in their construction. The framing for supporting the paddles and intermediate shafts is made of forge or wrought iron, and some idea may be formed of the value of this improvement, by comparing it with the ordinary cast-iron framing generally adopted. One of these pedestal blocks, of which there are four, when shaped and finished, weighed 28 cwts.; but if made of cast-iron, and equally strong, the weight would have been 80 cwts., and even then the liability to fracture would be more then trebly hazardous. There is, also, in the construction of these engines, a simple and improved arrangement of the eccentric and reversing motion, which enables the valves to be reversed for going ahead or astern with the greatest ease, and by which the labour of three men to each engine is saved when reversing. The mode of introducing the injection water is also new, simple, and effective. The *Affonso* was built for navigating the shallow rivers of the Brazils, and she is well armed for the protection of their trade, having a 64-pounder fore and aft, which swivel on carriages, and also four 34-pounders in her side ports. The vessel and engines were built under the orders and inspection of Admiral Grenfell, the Brazilian consul at Liverpool, and though from her construction she was not expected to sail more than 9 knots per hour, she accomplished 11½ on her trial trip.—*Liverpool Mercury.*

ALLEGED PROPULSION OF A VESSEL BY STEAM IN THE YEAR 1543.—T. Gonzales, director of the Royal Archives of Simancas in Spain, published in 1826 an account of an invention by Biasco de Garay, a naval captain, who, it is stated, exhibited in Spain, in 1543, an engine, by which ships of the largest size could be propelled in a calm without the aid of ores or sails. He made an experiment before commissioners, appointed for the purpose of examining his invention at Barcelona, on the 17th June, 1543—the vessel used being a ship of 200 tons. Garay, we are informed, wished to keep his mechanism a secret; but it was observed to consist partly of a large cauldron, or vessel of boiling water, and of two moveable wheels, one on each side of the ship. The experiment succeeded so far, that the vessel was propelled at the rate of two leagues in three hours; and the inventor was rewarded by receiving a sum of 200,000 maravedis, besides having his expenses defrayed from the public treasury. It is added, that the invention would have been further encouraged had not State expeditions of great consequence claimed the immediate attention of the emperor. But it is important to mention, that the authenticity of the entire history of Garay's invention, as published by Gonzales, has been called into question, and that no practical results of any utility followed.—*Fraser's Magazine.*

GUTTA PERCHA BOATS.—At Seacombe, a No. 1 pilot boat, built of gutta percha, has been tested. It is 17½ feet long, and though nearly filled with water, and having four men on its gunwale, kept its buoyancy. It weighs 190 lbs., and sustains a pressure of 15 cwts. It not only answers the purpose of a pilot boat, but is also convertible into a life-boat. This substance must make an excellent life-boat; and before we saw the above account, we had thought of calling attention to the feasibility of this application. The toughness, elasticity, and lightness of this material, for the purpose of boat-building, is unquestionable. The price is one dollar per pound, and 30 pounds must make a boat of a moderate size. The old gutta percha can be sold at a reduced price.—*Scientific American.*

EAST LANCASHIRE RAILWAY.—This line was opened for the public as far as Bromley, on Monday last.

MINING IN SOUTH AUSTRALIA.

We have received letters and papers from the colony to the 12th of April, but they contain little additional information to what appeared in our Journal of the 26th August. We then, and in a subsequent Number, referred to the annoyance which had been caused by the charges made against the colonial directors of the Australian Mining Company by the London board of management in their report of Dec. last; in refutation of which accusation in their administration, the colonial press remark, that they need only call to mind the fact, that the efforts of the local board had been such as to pass all expectations; and that they, in order to make the concern a profitable one, had incurred personal responsibilities to the extent of 13,000*l.*, and the result had much more than realised their hopes. One authority observes—"Nothing could have been more inopportune than the arrival in this province of the (London) Australian Mining Company's misgivings. While imaginary difficulties were thickening in the bureau of the remote directory, the subterranean impediments were being overcome in the colonial field of action; and the arrival of English 'dubieties' was anticipated by discoveries which had made assurance doubly sure at the mines of Tungkillo. We have learnt from an undoubted source of information, that one of the several lodes discovered in the company's extensive property is now producing from 40 to 50 tons weekly, of rich copper ores; the prevalent kind being the black sulphuret, which has been pronounced 'a 40 per cent. ore,' and gives promise of another Kapunda, at least in productiveness and relative value. From all we have heard, we have not a doubt but that the next report of the local directors will be triumphant for themselves, and undeniably satisfactory to their English constituents."

With respect to the Adelaide Mining Company's affairs, it appears that a productive lode, superior to anything previously found there, had been just discovered. The ore, it is said, is rich sulphuret, and likely to be very profitable to all concerned. The affairs of the Wheal Acraman are reported also as exceedingly favourable. On the section of 200 acres, which is situated near the Riversedge Mine, a promising lode of copper, 3 ft. big, had been discovered, and was being opened upon. Almost all the varieties of ore have been found in this section. That which prevails in the lode above-mentioned is the red oxide, and it is considered likely to make a valuable mine. The price asked for an interest in the undertaking is at the rate of 10,000*l.* for the section, and the value in which it is held by the proprietors is substantiated by the declaration of some disinterested judges of the property.

Mr. Hardy's new lead mine, near the toll-bar, Glen Osmond, had been leased to a company. A lode carrying galena had been discovered on cutting the road across the creek. This is in addition to the one previously known to exist, and which contains carbonate of lead. Spirited operations would be commenced forthwith.

A sale of Crown townlands at Glenelg is mentioned, which, although comprising only six acres, had realised the enormous sum of 500*l.*, which is equal to about 83*l.* per acre.

The following particulars respecting mineral discoveries in New South Wales, is from the paper published at Bathurst:—"Mr. Wentworth's mine, near Molong, has produced some exceedingly fine specimens of copper from a lode recently opened under the superintendence of Mr. Passmore. This discovery was made on a different part of the sett from that on which the workings were commenced. Should the lode prove of the same quality as the specimen we have seen, we may shortly expect to hear that the mine is working with success. We understand Mr. W. H. Suttor has discovered a lode of lead of a very superior quality on his estate near Bathurst. On the adjoining estate of Mr. J. B. Suttor a lode of the same description has been discovered."

ENCROACHMENTS THROUGH MINING OPERATIONS.

JURY COURT, EDINBURGH.

The following issues were tried at the last sittings, in an action at the instance of Mrs. Colonel Robertson, of Hallcraig, and her daughters, against the Shotts Iron Company:—It being admitted that the pursuers are joint proprietors of the land and estates of Hallcraig, and that the defenders are lessees of the mines and minerals in the immediately adjoining estate of Milton Lockhart: and it being further admitted that all surface damage done to the pursuer's foresaid lands, through the operations and encroachments of the defenders down to May, 1842, had been paid and settled for by them:—

1. Whether, in the course of the years 1839, 1840, 1841, 1842, 1843, 1844, and 1845, or any of them, the defenders, by and through their operations in opening and working the said mines and minerals on the estate of Milton Lockhart, encroached upon and occupied portions of the lands of Hallcraig, extending in measurement to four-fifths of an acre, or thereby, lying immediately to the north of the boundary line between the said estates of Milton Lockhart and Hallcraig, and to the east and south-east of a burn called Horley Burn, to the loss and injury of the pursuers?

2. Whether, by and through the said encroachments, damages have been suffered by the pursuers from and after May, 1842?

3. Whether, in the course of the year 1837, the defenders, without the consent of the proprietors of Hallcraig, or any one on their behalf, encroached upon, and made and constructed a railway partly on the bed or channel of a burn, called Jock's Burn, where it forms the boundary of the properties of Hallcraig and Milton Lockhart, to the loss, injury, and damage of the pursuers?

Damages claimed, in addition to the demand for restoration of the subject to its former condition, 1000*l.*; or

1. Whether, in the course of the months of February and March, 1843, or about that time, the defenders restored the foresaid portion of the pursuer's lands to the original condition in which they were, previous to any encroachments thereon by the defenders?

2. Whether the pursuers, their prodecessors, or authors, acquiesced in the construction of the said railway?

Mr. A. S. Logan opened the case for the pursuers. He stated that the object of the pursuers in the present case was not so much directed towards pecuniary damages, as towards a restoration of the lands which (proof would be led to show) had been encroached upon.

The defenders, on the other hand, maintained that the railway mentioned did not encroach on the channel of the burn, and that the other encroachments had been partly restored formerly, and partly occasioned through a lime-work belonging to the pursuers themselves. Evidence was led on both sides, at great length; and, after a very able speech from the Solicitor-General,

Lord Robertson (the presiding judge) delivered his charge; and the jury withdrew, returning shortly afterwards with a unanimous verdict in favour of the pursuers on all the issues; assessing the damages at 25*l.* The case occupied two entire days.

For pursuers: The Solicitor-General, Mr. Maitland, and A. S. Logan, advocates; Hunter, Blair, and Cowan, W.S., agents.—For defenders: The Dean of Faculty, and Mr. M'Farlane, advocates; A. Melville, W.S., agent.

ACCIDENTS.

Another Accident from Breaking of a Rope.—As Joseph Yates was descending the pit at "Strangeways" Colliery, Hindley, near Wigan, the up rope broke, and he fell a distance of 27 yards, and was taken up dead. There can be no excuse or palliation for these accidents now, when Fourdrinier's apparatus is in use—practically proving they may be divested of all injurious consequences to the men.

Cowpen Colliery, Blyth.—W. Tunney was killed by a fall of coal, while at work.

Camlington.—T. Halcoe, six years of age, was drowned by falling into a quarry, containing 12 ft. of water, having overbalanced himself while picking haws from a hedge on the brink.

Burnley.—W. Whittaker fell a depth of 16 yards down the Hollin Grove pit, from the rope breaking where it had been spliced, and was so severely injured, that he died on Sunday morning last.

Tividale.—As W. Thomas was commencing his work, at Messrs. Bagnall and Jesson's colliery, a quantity of coal fell and killed him.

Wolverhampton.—P. Cane was killed whilst at work in a stone pit at Mosely hole, by a quantity of clod falling upon his head, and fracturing his skull.

Stow Heath Colliery.—On Wednesday, the 13th inst., Edward Jones, aged eight years, a "gin" driver, was employed in letting his father down a pit, when he left the horse, and proceeded to the mouth of the pit, for the purpose of looking at him descending the shaft. Some boys having previously removed the nails connecting the cross-bar of the pit-frame, the bar gave way, and the youth was precipitated to the bottom of the shaft, a distance of 23 yards, falling upon the ring of the skip in which his father had just descended. By the fall Jones sustained a compound fracture of his thigh, and several severe injuries on his head. Mr. Turton, surgeon, reduced the fracture, and the boy is now doing well, and likely to recover.—*Wolverhampton Chronicle.*

On Tuesday last, an explosion of fire-damp took place in Mr. Samuel Potter's Boswell Pits, by which several of the colliers were severely burnt.—The frequency of accidents of this nature, at this and other pits in the neighbourhood, certainly calls for inquiry on the subject.—*Derbyshire Reporter.*

Distressing Accident at Wanlockhead Lead Mines.—On Thursday, the 14th inst., the Duke of Buccleuch, three of his sons, and a party of ladies and gentlemen, paid a visit to his Grace's lead mines at Wanlockhead. The villagers had made considerable preparations to give them a hearty welcome. A rude piece of artillery, which had seldom been used, was furbished up for the occasion by some of the young miners. One or two shots had been fired, when the piece, by some means or other not fully explained, was accidentally fired, the shot taking effect, we regret to add, upon a young man named John, son of James M'Call, who was standing near the cannon's mouth. He was blown into the air, and very much mangled. The shot, for the piece had been loaded with small stones, entered the lower part of the body, inflicting most dreadful wounds. He was carried to his father's house, where Dr. Watson was speedily in attendance. Dr. Martin was also brought from Leadhills; but medical aid was of no avail, as he expired about two hours after receiving the injury. Deceased, who bore his severe sufferings with extraordinary fortitude, was 20 years of age, and a very deserving young man. His untimely death has cast a gloom over the usually happy village. This is the second accident in this family. A few years ago, a younger brother lost his right hand by an accident at one of the crushing machines. The noble party, when informed of the fatal accident, gave orders that everything should be done to alleviate the sufferings of the unfortunate individual.—*North British Daily Mail.*

Mining Correspondence.

ENGLISH MINES.

BARRISTOWN.—Captain T. Angove (Sept. 15) reports—The lode in the 16 fm. level end east is considerably improved—about 18 in. wide, much more regular, and producing about 8 cwts. of lead ore per fathom; the lode in this end west is at present poor. In the adit end east the lode is still producing about 1½ ton per fm. We are sinking flat-rod shaft with all possible dispatch.

BEDFORD UNITED.—Captain J. Phillips (Sept. 20) reports—At Wheal Marquis the engine-shaft is 6 fms. under the 90 fm. level—ground much the same for sinking; we do not intend cutting into, or taking down, the lode in the 90 fm. level east, until the end of this month. In the 80 fm. level east the lode is 3 ft. wide, and will produce from 3 to 4 tons of ore per fm; in the winze in this level we are sinking by the side of the lode. There has been no lode taken down in the 70 fm. level east.

COMBLAWN.—Captain J. Hosking (Sept. 18) reports—As we are to commence working the 1st Oct., it will be necessary for me to engage a man immediately, to watch the engine by night, keep the leats clear, &c. In doing so, we can fork the water by the appointed time; and I have not the least doubt, but that we shall intersect the cross-course (on the north and south lode) by the end of October, if all be well. In driving south from the engine-shaft, we shall soon intersect the lode we drove on in the 15 fm. level, and get under the spot where the lead went down, in the bottom of that level; that is the spot where the sample was taken from which Capt. Prince assayed. We are still cutting open the Lobby level, over the cross-course, to take up all the water we possibly can. We have at present a good supply of surface water, and I sincerely hope that it will hold out until the water is in fork and the lode cut.

CWM ERFIN.—Capt. Samuel Nicholls (Sept. 16) reports—The water has been in the mine for the first two or three days of this week, on account of a breakage of the rods in the lift; in the engine-shaft the men have got out the water, and have driven about 2 ft.; the stope, west of the engine-shaft, is just as last week's report—10 cwts. of ore to the fathom. In the cross-cut, in the 10 fm. level, east of the engine-shaft, there has been but little done to report on this week. The tributers have not taken down any part of their lode this week. I have set the pitch from the engine-shaft to the whim-shaft, in the 10 fm. level, at 9*l.* 10s. per ton—the taker to pay 45s. per ton for dressing the ore.

DEAN PRIOR AND BUCKFASTLEIGH.—Capt. H. Choake (Sept. 20) reports—We are exploring the 40 fm. level as fast as possible towards the lode—driven from the engine-shaft, 4 fms. 2 ft. The parcel of copper ores will be all carried to Totness by Saturday next, together with the stamps' ores, and will be all ready for sampling, sale, &c., at any time you may appoint.

EAST CROWNDALE.—Capt. S. Paull (Sept. 16) reports—The ground in Diamond's engine-shaft, at Rix Hill, continues favourable for sinking, the ground being composed of a light blue killas, with small floors of elvan and spar. The adit level, driving west, on the course of Thomas's lode, presents just the same appearance that it has for several weeks past; the lode is about 13 ft. wide, composed of peach, killas, prian, mundic, gossan, flookan, and tin, and at present worth upwards of 40*l.* per fm. The stopes, in the back of this level, continue to be worth about 20*l.* per fm.; the lode is 8 ft. wide, composed of peach, prian, killas, mundic, and tin. The part of the lode we are now carrying, in Thomas's shaft, is poor, composed of gossan, peach, mundic, killas, and spots of tin; the ground is favourable for sinking. The piece of lode we have been stoping, in the back of the adit level, west of Harris's shaft, on the north lode, is so impregnated with mundic, that, for the present, I have suspended it, and shall, in the next week, put the men to take down a piece of lode left in the western end, on Thomas's lode.

GREAT MICHELL CONSOLS.—Captain T. Richards (Sept. 20) reports—The lode in the 45 fm. level, west of the sump winze, contains mundic, capel, and spar, with good stones of ore in places. In the 35 fm. level west, in the sump-winze, the lode is without material alteration, containing mundic, capel, spar, and prian, with a small proportion of black and yellow ore; the ground is again improved for driving.

HOLMBUSH.—Capt. William Lean (Sept. 19) reports—The ground in the diagonal shaft, sinking below the 132 fm. level, is still favourable for exploring, rendered so by small cross-courses passing through it. The lode in the 132 fm. level west is 20 in. wide, composed of mundic, capel, and spots of copper ore—ground softer than it was on setting-day, and the end is to within 6 fms. of the great cross-course, to the west of which we hope to meet with a similar course of ore we had in the 120. The lode in the 120 fm. level south is 5 ft. wide, composed of quartz and lead, producing 3 cwts. of lead per fm.; the lode in the stopes, in the back of this level, is 4½ ft. wide, producing saving work. The lode in the 110 fathom level south is 3 feet wide, composed of quartz, prian, and lead, producing 2 cwts. of lead per fathom; the lode in the stopes, in the back of this level, is 4 ft. wide, producing saving work, but not rich. The lode in the 100 fm. level south is 2½ ft. wide, composed of soft spar, prian, and lead, also saving work, but, on the whole, is very bunchy; in the same level east, on the Flap-jack lode, we think we have reached the western side of the great cross-course, and shall intersect it as quick as possible, to enable us to drive north, to cut the caunter part of the Flap-jack lode—a point which will be watched with great anxiety. We hope to get the parcel of lead shipped this week for Point.

KIRKCUDBRIGHTSHIRE.—The agent (Sept. 16) reports—The lode in the 50 end, west of Stewart's, is 18 in. wide, with a good stone of ore in the breast of the end; the north lode, driving east, in the same level, is 2 ft. wide, worth near half-a-ton to the fathom. In the 40 end, west of Keith's, the men have been rising against the winze this week, which is now holed, and they have resumed driving again; the lode is very kindly, yielding about 7 cwts. of lead to the fathom. The 30 end, over this, being very shallow as we approach the valley, we have suspended it. At Keith's shaft, the lode is large, and is producing some fine stones of ore, but it is difficult to save them in sinking. The 30, east of Stewart's, is a good end, producing ½ ton to the fm.

LAMERHOOE WHEAL MARIA.—Captain J. Tabb (Sept. 18) reports—I have this day put the men to cut through the lode in the 30 fm. level, to ascertain its quality, and to see how far apart are the two main branches, and where likely to form a junction—the first being from 12 to 14 in., and the second from 3 to 4 ft. wide. The ground in engine-shaft continues favourable.

MENDIP HILLS.—Capt. F. C. Harpur (Sept. 18) reports—In laying open the cutting, towards the eastern part of the valley, we find a gradual improvement in the quality of the work; the beds of stuff, through which we are at present opening, are about 14 ft. thick—the greater portion of which is, I think, better work than we have hitherto removed to the dressing-floors. During the past week, we worked the furnaces four days—the produce being about the same as formerly. The 38 end presents nothing whatever worthy of notice.

SOUTH WHEAL BETSEY.—Capt. John Spargo (Sept. 20) reports—In driving the cross-cut east we are daily expecting to cut softer ground, as we are within a few feet of the lode; the water is very powerful, so much so, that it is with great difficulty we can blast; however, we have set it at 1*l.* per fm. cheaper than last setting, as they have somewhat got through a hard bar in the back of the end; we have also commenced shoding on the copper lodes, and hope, by another week, to discover something satisfactory.

SOUTH WHEAL TRELAWNY.—Capt. W. Jenkin (Sept. 18) reports—We are still driving the cross-cut, west of Snell's engine-shaft, in the 30 fm. level, with eight men—in from the shaft 7 fms., ground favourable. We have, also, a little more than 2 fms. to drive to get under the perpendicular of the lode in the adit.

TRELEIGH CONSOLS.—Captain William Symons (Sept. 16) reports—In Garden's shaft, below the 100 fm. level, the lode is 2½ ft. wide, with mundic, jack, &c., but little mineral. In the 90 east, the cross-cut south is to cut a south part of the lode. In the 70, west of Garden's, the lode is 2 ft. wide, rather more promising, with stones of ore. In the winze, below the 60 west, the lode is 2 ft. wide, with occasional stones of ore. In the 50, west of ditto, the lode is 20 in. wide, but little ore. Wheal Parent engine-shaft, below the adit, sinking in the country. The adit cross-cut north is to cut Wheal Orphan lode; east from the adit, on the middle lode, the lode is 14 in. wide, with stones of ore only.

WEST WHEAL JEWEL.—Capt. R. Johns (Sept. 18) reports—In the 70 fm. level, west of Williams's cross-course, on Wheal Jewel lode, the lode is worth 4*l.* per fm. In the 57 fm. level, west of Williams's cross-course, on the same lode, the lode is 3 ft. wide, and worth 6*l.* per fm.; in the rise, in the back of the 57 fm. level, west of Williams's cross course, on the same lode, the lode is 2½ ft. wide, and worth 7*l.* per fm.; in the same level, east of Williams's cross-course, on the same lode, the lode is improved in the past week in size and appearance. In the 47 fm. level, west of Williams's cross-course, on the same lode, the lode is small and unproductive; in the deep adit, west of Hodge's cross-course, on the same lode, the lode is 9 in. wide, saving work, not rich for ore. In the 30, west of Quarry shaft, on Tolcarne tin lode, the lode is 18 in. wide, unproductive; in the deep adit, west of Quarry shaft, on the same lode, the lode is 15 in. wide, producing stones of tin. The stopes in the back of the 12 fm. level, east of Pryor's winze, on Tolcarne tin lode, is worth 23*l.* per fm. The stopes, west of Pryor's winze, working on tribute, are worth 26*l.* per fm. The stopes in the bottom of 12 fm. level, working on tribute, worth 25*l.* per fm.

WHEAL SARAH.—Captain J. Spargo (Sept. 20) reports—The western shaft is down about 10 fms. from the surface—the ground in which has been rather stiff; however, the last 2 or 3 feet, has been much softer, which might be expected, as we are getting near the lode; we now intend to drive a cross-cut a few feet to cut the lode. We have met with a slide in the shaft, underlying a few degrees east of north; it is composed of soft spar, baryte, and carbonate of lime, which appears to the eye much like the Cornish diamonds. I never saw anything of this kind on the main lode; it is, of course, a good indication for lead. We have set the wheel-pit to sink at 8s. per solid fathom, which will be completed in about nine days from this time; we have set one leat at 5d. per yard, of 18 ft. We have completed the count-house and smiths'-shop; the smiths are engaged in making flat-rods, &c., for the old shaft; we have collared and timbered the same to the 9 fm. level, which is as far as we can go for water; and we expect under this to find the shaft firm, and require but little or no timber. We have men engaged cutting through the burrow, so as to bring on our flat-rods to the shaft; and the men in the lobby are getting on very satisfactorily. We are also preparing a whim-round at the old shaft; we have also waggons carrying materials—such as pumps, rods, &c., from West Wheal Maria; and intend to get the wheel on the mine next week. I have set the same to be taken abroad, and rebuilt again at the mine, for the sum of 5*l.* We hope to fork the water in the old mine in three weeks.

WHEAL VINCENT.—Capt. J. Spargo (Sept. 20) reports—Since I reported this mine last, we have opened on the south lode to the east of the valley, and have broken most excellent stones of tin, a box of which I have sent to the company; the lode here is about 1 ft. wide, and would pay well, but we cannot follow it down, on account of water. We have broken good stones of tin in the shode pits, upwards of half a mile in length; however, we intend to see it by the cross-cut in the western hill, before determining on our future operations. The ground in the cross-cut continues as last reported on—still favourable for driving, but a great deal more water proceeding from the end; the water in the old workings is still decreasing, whether on account of dry weather, or that we are draining it by the cross-cut, I cannot say. In driving on the north lode we are still breaking stones, spotted with copper, and stones of tin occasionally. We are bringing up a lobby, or open cutting, so as to take off the surface water from the shaft, the expense of which will be but a trifle.

Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.

MONDAY.....Real del Monte Mining Company—offices, at One.
WEDNESDAY...Wheal Walter Mining Company—offices, at Twelve.
THURSDAY.....East Wheal Fortune Mining Company—Red Lion Hotel, Truro.
East Tamar Consols Mining Company—offices, at One.

COOMBE VALLEY SLATE COMPANY.

The half-yearly meeting of proprietors was held at the office, on Tuesday, the 19th inst. W. D. King, Esq., in the chair.

The meeting was well attended, and the business conducted in a very harmonious manner. It appeared, that about 2500*l.* had been expended, in bringing the works to their present state; some of the gentlemen present were of opinion that a much less sum would have been sufficient, had the committee of management been arranged in a different manner—they, therefore, made a resolution, that in future the committee should consist of 5 persons, instead of 13.—The Secretary entered into a description of the various difficulties that they had to encounter in the late trying monetary crisis, and then went on to show, that the property was now worth cent. per cent. more than its cost; he had not the least doubt, if the quarries and the harbour were put into the market, 5000*l.* could very easily be obtained; they were now on a vein of slate, that with a very trifling outlay would afford sufficient room for the employment of 500 men, producing eight cargoes per month. A sample of the slate they were now making was shown, which for lightness, beauty of colour, and make, was rarely excelled in the Welsh quarries. He informed the shareholders that he had received orders for every slate they could possibly make for the next six months; the economy of working the quarries was evident, being close to the sea, and that he only now wanted capital for labour, which, if they would furnish him with, he would prove to them that all he had previously said about the company's prospects would be realised. He had been very sanguine from the very commencement, for which he had often been blamed, but now he was more so—the quarries, he considered, proved beyond a doubt, that they would be a very valuable and very lasting property. Two gentlemen present had been down at the quarries during the last month, and admitted that the veins of slate were of a very beautiful description; a report from one of them was read.

A report from Mr. Griffith Jones, manager of the quarries, was read; it gave a very flattering account of the slate veins he was now working on. He is of opinion, that almost any quantity can be raised, and a great deal of the finest quality. He had got a cargo ready, which he hoped the company would take off, as the weather was now very fine for shipping.—The report was received by every one present with the greatest satisfaction.—There were, it appeared, 181 reserve shares on hand; and it was proposed, that the present shareholders should be offered them, in a proportion of one to every four they held—which offer was readily accepted, and nearly the whole were disposed of before the close of the meeting.—A plan for a revision of the rules, and reducing the company's expenses, was proposed, which was left for the consideration of the new committee of management, and to be brought forward at the next two-monthly meeting.

A vote of thanks was then moved to the chairman, for the very able and praiseworthy manner in which he had fulfilled that office; and the meeting separated, highly pleased with the proceedings.

WEST UNITED HILLS MINING COMPANY.

At a meeting of adventurers held at the Queen's Arms Hotel, Cheapside, on the 8th inst.—Thomas Camplin, Esq., in the chair—the accounts were presented, showing—Balance of loss end of August, 284*l.* 9s.; labour cost for Sept., 1847, to July, 1848, inclusive, 250*l.* 3s. 4d.; merchants' bills and engine, 278*l.* 14s. 11d. = 813*l.* 6s. 3d.—By calls and arrears, 546*l.*—leaving balance against the mine of 267*l.* 6s. 3d.—The accounts having been allowed and passed, it was resolved, that all defaulters be proceeded against by merchants, and that the purser report to the adventurers before 10th of October next, of all payments of calls paid up, and also a report of the state of the mine.—Messrs. Carey, Edwards, and Camplin, were appointed a committee, to audit and inspect the accounts of the mine, and the purser requested to send up the accounts monthly.—The following report from Capts. Rabey and Martin was read:

West United Hills, Sept. 4.—You must be aware that our operations are so very limited, only driving the adit cross-cut north, that we have but little to report upon since our last, the ground in the cross-cut has not been very favourable for driving during the past month, but at present it has an improved appearance. We wish we had more extensive orders, so as to commence sinking a new engine-shaft, and to erect an engine on the mine—we should soon be classed among the mines of the first magnitude; having so many lodes of such immense size, and high promising character, place it beyond a doubt on our minds of certain success, and such are the opinions of every practical miner who has inspected the mine, that nothing is wanting, but to get deeper, to ensure a productive and prosperous concern.

WHEAL ANDERTON MINING COMPANY.

At a meeting of adventurers held at the Boot Inn, Plymouth, on the 18th inst.—Henry Seaman, Esq., in the chair—the following report from Captain Carpenter was read to the meeting:—

Wheal Anderton, Sept. 18.—Since the meeting held on the 8th of August last, we have driven the 80 fm. level west on the lode 7½ fms.; it still retains its size, averaging 6 ft. in width; about 3½ ft. on the north part is productive of good tin work, sufficient in quantity to admit the back of the level to be broken at 3s. in *l.*, the tributers paying all costs to prepare it for the stamps. In order to ascertain its continuance under the level, I put four men to sink on Monday last, and perceive there is no diminution either in size or quality—rather on the increase in size; I do not expect farther proof of its properties in depth before the engine-shaft is being sunk to the 90, which I strongly recommend proceeding with immediately, to open the ground, whereby we may increase our samplings, which I think there is no doubt of doing in prosecuting the mine in depth and extension, as proved in what we have already done by the same mode of procedure. The lode east of shaft in the 80 is also large, and in a very improved state to what I have seen it in either of the levels above; the ground is become more settled, and the indications are such as to warrant the extension of this level considerably, as I expect we shall be very near other lodes south, which are inclining towards us in depth, and making a more northerly direction west—therefore, we must come in contact with them, even if compelled to drive a short cross-cut south. The lode in the 70 fm. level west is 3 ft. wide, and producing some good stones of tin—in fact, a great part of it good work for stamping, the back being stoped after it at 6s. 6d. in *l.*; I anticipate an improvement in this place shortly, as we are fast approaching to be under a good shoot of tin gone down in the 60 fm. level, about 3 fms. west of the 70 end, the water being too quick to sink deeper under the 60; also very inconvenient to get up the stuff; I have suspended this part, and placed the men to drive the 60 fm. level west, where there is a very promising lode; the tributers have taken up 4 tons of tin these last two months, under the level, of good quality; and as the 70 fm. level is nearly under this point, the ore that may be between the levels can be extracted to better advantage, both for adventurers and men, than continuing to sink and stope the bottom. I have sent in for shipment 13 tons of tin, and am happy to say, I never saw the prospects of the mine more encouraging for farther development than at present; I have every confidence in its continuing to improve as we progress, and believe it will make a great concern ultimately.

The report having been received, the shares in the mine were fixed at 300; and it was agreed that those shares not taken by shareholders, as per resolution of last meeting, be offered to the public at 15*l.* per share.

WHEAL MARY ANN MINING COMPANY.

At a general meeting of adventurers, held at the White Hart Inn, Liskeard, on Wednesday the 20th inst.—Capt. P. Clymo, jun., in the chair—the accounts for June and July were produced, showing—Received from Tamar Smelting Co., for lead ores (59 tons 18 cwts. 3 qrs., at 17*l.* 1s. 6d. per ton), 1022*l.* 13s. 4d.; by call of 22d Sept., 8*l.*; for paving stones, 11s.=1026*l.* 4s. 4d.—By mine coats, 982*l.* 0s. 10d.—leaving profit on the two months of 44*l.* 3s. 6d., which deducted from balance, end of May, 262*l.* 18s. 3d., shows present debt of 218*l.* 14s. 9d. The accounts having been received and adopted, the following report, from Capt. P. Clymo, jun., was read to the meeting:—

Wheal Mary Ann, Sept. 19.—We cut the lode in the 40 fm. level, Pollard's shaft, on Saturday last; it is 2 ft. wide, composed of can and lead, and will produce half a ton of lead per fathom. We consider this a very important discovery, as it proves the lode to be productive in the southern hill, and 120 fathoms south of Wheal Trelawny boundary. The lode in the 30 fm. level, south of this shaft, is 14 ft. wide, and will produce 1 ton of lead per fathom; this level is driven 25 fms. south of the above shaft. The 30 fm. level is driven south of Wheal Trelawny boundary 9 ft., where the lode is 14 ft. wide, and will produce about half a ton of lead per fathom. We are preparing to sink Barnett's shaft

under the 40 fm. level. The lode in the 40 fm. level, south of this shaft, is 3 ft. wide, and will produce 16 cwts. of lead per fathom; this level is extended 20 fms. south of the shaft. The stopes generally throughout the mine are looking well. In conclusion, I beg to say, that it is my opinion that we shall ultimately have a good and profitable mine.

BLAENAVON IRON AND COAL COMPANY.

An extraordinary general meeting of shareholders was held at the London Tavern, yesterday, to receive the report of the Committee of Investigation appointed in April last.—R. W. KENNARD, Esq., in the chair.—The report of the committee was highly satisfactory as to the conduct of the directors, but they were of opinion that a great error was committed, many years ago, by endeavouring to do too much with an inadequate capital. Two members of the committee had visited the works, and, after mature consideration, they found that a very considerable reduction might be made in the expenditure, and a very considerable saving in almost every department of the works. They recommended the proprietors to make an effort to carry on the concern for one year longer, to save the large sum of money at stake upon their property, for which purpose they recommended a subscription of 2*l.* 10s. per share. The fund would be applied to relieving the concern from the loss annually sustained by want of trading capital, and also to the erection of coke-ovens, and other improvements. After some discussion, the resolution to subscribe 2*l.* 10s. per share, to bear interest at the rate of 6 per cent. per annum, was agreed to.

Then a vote of thanks was passed to the committee, and to the directors, when the meeting adjourned.

[We shall give a detailed report of the proceedings in our next Journal.]

BOTALLACK MINING COMPANY.

At a quarterly meeting of shareholders, held at the mine, on the 15th inst., the accounts were examined and passed, showing—Balance of last account, 420*l.* 16s. 8d.; labour cost for April, 477*l.* 2s. 7d.; ditto May, 437*l.* 3s. 6d.; ditto June (and carriage), 469*l.* 16s. 11d.; merchants' bills, 603*l.*—together, 2408*l.* 9s. 1d. By tin sold:—

Date.	Tons	c.	qrs.	lbs.	Price per ton.	Amount.
July 11	3	16	0	19	£36 10 0	£139 0 2
19	4	5	1	22	44 10 0	190 2 3
Aug. 3	2	15	1	24	41 2 6	114 1 0
16	4	13	2	8	45 0 0	210 10 6
Sept. 14	6	16	3	2	44 10 0	304 6 0
„	3	8	2	17	33 10 0	114 19 6
„	6	15	2	7	39 0 0	264 7 0
„	2	7	0	6	40 10 0	95 5 6
Total	34	18	2	21		£1432 11 11
Cash of tributers from tin leavings						106 11 2
						£1539 3 1
From which deduct dues (1-24th)						64 2 8
Total for tin sold						£1475 0 5

Copper ores sold (less dues), 154*l.* 5s. 1d.; old iron ditto, 11*l.* 15s. 7d.—leaves balance against the mine, 767*l.* 8s.

A call of 7*l.* 10s. was made, payable to the purser forthwith.

WHEAL TRELAWNY MINING COMPANY.

At a two-monthly meeting of shareholders, held at the Fountain Inn, Liskeard, on the 19th inst.—Capt. J. BRYANT in the chair—the accounts were examined and passed, showing—Amount received from Messrs. Walker, Parker, and Co., for 88¾ tons of lead ores, at 13*l.* 13s. per ton = 1210*l.* 19s.; from T. Somers, Esq., for 92 tons 0 cwt. 3 qrs., at 14*l.* 15s. 6d. = 1359*l.* 16s. 6d.; Wheal Trehane adventurers, 38*l.* = 260*l.* 5s. 6d.—By labour cost, 1844*l.* 19s. 6d.; merchants' bills, 556*l.* 8s. = 2401*l.* 7s. 6d.: leaving balance in favour of the mine, 202*l.* 8s.; to which add balance at last account, 94*l.* 9s. 10d.—making a total in favour of 296*l.* 17s. 10d.—It was resolved, that Capt. Kemp's wages be raised from 6 to 7 guineas per month.

The following report from Capt. Bryant was read to the meeting:—

Wheal Trelawny, Sept. 19.—You may see from my weekly reports that the value of the lode in the end varies considerably; and, in order that you may more correctly estimate the value of the mine, I have minutely examined and measured the ground explored in the different levels since the last general meeting, and put a value on it. Phillips's shaft is sunk to the 72 fm. level, and a cross-cut driven towards the lode 8 ft., where the ground is favourable, and we expect to see the lode against our next general meeting. The ground opened in the 62 fm. level, north of Phillips's shaft, in the two months, is 6 fms. 4 ft., where the lode is worth, on an average, 10*l.* per fm.; the end is worth at present 7*l.* per fm.; in this level south we have opened 6 fms., where the lode is small, producing stones of ore; the lode in the end is unproductive at present—however we are daily expecting an improvement; the stopes in the back of this level are yielding a fair quantity of ore. The 52 fm. level is extended north of Phillips's shaft 9 fms. 3 ft., where the lode is worth, on an average, 7*l.* per fm.; the lode in the end is large, and worth at present 15*l.* per fm.; this level is extended south 5 fms. 3 ft., where the lode is in an unsettled state, producing good stones of ore in places; the end is poor at present; about 24 fms. behind this end a winze is sunk 3 fms. 2 ft., where the lode is worth on an average 12*l.* per fm.—the same will apply to the bottom of it; the stopes in the back of this level are producing a moderate quantity of ore. Trelawny's shaft is sunk 6 fms. under the 52 fm. level; we are sinking in a hard floor of elvan at present, but hope to get through it shortly; this stratum impedes our progress, but I think it is congenial for lead in this neighbourhood, the 52 fm. level is driven on the lode at this shaft 5 fms. 3 ft., where it is worth on an average 8*l.* per fm.; the same will apply to both ends at present. The 42 fm. level is extended north 11 fms. 3 ft, where the average value of the lode is 7*l.* per fm.; the end is worth at present 10*l.* per fm.; the winze in the bottom of this level is sunk 2½ fms., where the lode is worth 9*l.* per fm.; the stopes in the back of this level are not altogether so good as they have been. The 32 cross-cut is extended east 38 fms. from Trelawny's shaft; the ground in the end is clean killas, price for driving 6*l.* 10s. per fm. We have 14 men working on tribute above the 32 fm. level, raising the lead on an average for 4*l.* per ton. At the north mine, in the 30 fm. level, north of Smith's, we have discovered the lode to be here 10 ft. west, by the east and west course; we have just commenced opening on it, where it is 2 ft. wide, composed of spar, capel, can, and lead, worth at present 6*l.* per fm.; judging from the appearance of the lode, and the great quantity of water coming from it, I anticipate an improvement here shortly. August ores, computed 94 tons, were sold yesterday to the Tamar Smelting Company, at 15*l.* 15s. 6d. per ton.

CONSOLIDATED MINES.—At a meeting of adventurers, held at the account-house, on Wednesday last, the accounts for July and August were submitted and allowed, showing—Balance from last account, 2215*l.* 0s. 1d.; ores sold (less dues), 6668*l.* 14s. 8d. = 8883*l.* 14s. 4d.—To costs and merchants' bills, 6864*l.* 7s. 8d.: balance in favour of adventurers, 2019*l.* 6s. 8d.

MINING NOTABILIA.

[EXTRACTS FROM OUR CORRESPONDENCE.]

ANTIMONY AND SILVER-LEAD MINE.—The general opinion respecting this mine is, that if effectually worked, and a 30-in. cylinder erected, which would be sufficient to prove the mine to a considerable depth, she would turn out a first-rate lead mine.

EAST TAMAR CONSOLS.—I learn that the lode in the 25 fm. level is producing very good work—indeed, it may be considered the best yet raised; the ground in the shaft is very favourable, and the probability is, that the shaft will be down to a 72 fm. level in about eight weeks. The pitches are also yielding a fair quantity of lead, and the mine generally is improved.

NORTH WHEAL FRIENDSHIP, OR BLACK DOWN.—This mine is situated about half-a-mile to the north of Great Wheal Friendship; they have discovered two very kindly lodes; they have sunk a shaft to take the lode at 10 or 15 fathoms deep, but were unable to carry out their intentions, by reason of a flow of water that came much faster than they could manage to keep, only about 8 or 10 fms. deep, where they cut into the lode by a cross-cut, and found it to contain large quantities of gossan, spar, &c., of a promising appearance. The lode is 4 ft. wide, with two good walls, being in the vicinity of that most excellent mine, parallel lode, and in the same strata; it is every one's opinion that it will ultimately turn out well.

SOUTH FRIENDSHIP WHEAL ANN.—In driving the 17 fm. level east of Wheal Ann shaft, they have discovered a very rich branch of ore, although but small, yet the lode is large, and spotted with rich yellow copper; and there is every reason to expect, that in the deeper levels, where the lode will get more defined, it will give good profits, especially if they were to sink South Friendship shaft 20 fms. deeper; I am given to understand, that the branch of ore is near the foot wall of the lode.

SOUTH PETHERWIN.—I am given to understand, that there are parties inclined to put on this little kindly speculation. Some gentlemen from London have been down, and took samples of copper and lead from the back of the lode, not more than 18 ft. from surface. I expect the report from different agents will appear in the Journal in a week or two. There are parties from Exeter who have also broken some excellent stones of copper, that gave 11 per cent.

WHEAL FRANCO.—The lode in the 47 fm. level east, and in a winze in the bottom of that level, is yielding very fair work, and has a very promising appearance. The lode is not yet cut in the 62 fm. level, but the winze above alluded to looks well for the 62. Wheal Franco wants a better standard, and if we had a fair one, we should be now doing tolerably well; and I think the chances are, that the mine will much improve within the next few months.

WHEAL SARAH.—They are preparing to fork the water in the old mine, at the same time sinking a new shaft, about 70 fms. south in the deep valley, to intersect the lode at a deeper level. They have sunk a shaft on a newly-discovered lode (which was unknown to the former company), and are now down about 10 fms., where they intend to drive a few feet to cut the lode, and then to continue on the course of it, by means of flat-rods, from the same machinery pumping in the old shaft; this lode is parallel with the main lode, and is about 4 ft. wide at surface, with a splendid gossan; the strata is a blue clay slate, with large branches of carbonate of lime, baryte, white iron, &c., which they have intersected by the shaft dipping towards the lode; this lode underlays east, and the main lode west, and will form a junction at about 55 fms. deep, at which point some important discovery may be presumed.

REAL DEL MONTE MINING COMPANY.

SIR,—The directors of this company have called a meeting of the proprietors on the 25th inst., for the purpose, as it is said, of winding up the concern; and a pretty winding up it will be. I have been a proprietor from its origin, and now hold a 400*l.* share, with an additional one, which cost me 125*l.*, and for which I have never received one sixpence interest. After this, further sums were borrowed by the directors, for which black scrip, red scrip, and bond notes were issued, and for which, I suppose, interest has been paid; but the whole matter is so jumbled up and complicated, that it is impossible for any proprietor living in the country, to come at, or understand, the present state of things.

The original capital was 400,000*l.*, and consisted of 1000 shares, of 400*l.* each; and, by some *hocus pocus*, I see these are now increased to 29,320 shares, of 28*l.* 15s. each.

Pray, Sir, have the goodness to inform me, through the medium of your Journal, how many shares I am entitled to for the 400*l.* and 125*l.* I originally subscribed. This will not only oblige me, but it will enlighten many other unfortunate and simple shareholders, who, like myself, are now looking through a *glass darkly*.—L.: *Sept.* 21.

MINING IN THE EASTERN DISTRICT.

SIR,—Your correspondent, in giving a report of the mines in the eastern district, in last week's Journal, mentioned that the lode in Trehane will continue in the sett 100 fms. deeper than at present. Now, Sir, I shall be glad if he would also inform me the length there would be on the *course* of the *lode* in the *different levels* that must be driven before the 100 fms. are sunk; as I have understood the lode leaves the sett at a point.—Y. Z.: *Liskeard, Sept.* 20.

ROYAL POLBERROW CONSOLS MINES.

St. Agnes, Wednesday, Sept. 20.—The arrangements for reworking these extensive mines have now been completed. They will be worked under the management of John Taylor, Esq., to whom this parish is deeply indebted for his indefatigable exertions in bringing the affairs of the mines to so favourable an issue. The miners especially, who have received the full amounts due to them, feel that they are under unspeakable obligations to that gentleman for the good feeling he has manifested towards them, and for his active exertions on their behalf.

On Monday, the tributers were paid; and the town and surrounding villages wore the appearances of "olden times." The joyous countenances of the numbers congregated together, bore a marked contrast to their late dejected anxious looks. While, with gratification, we record this change in their circumstances, we cannot but look back with admiration on their praiseworthy resignation and forbearance when sudden adversity came upon them. Though their earnings were for a while kept back, and that, too, at a time when many parts of the county were agitated by riotous disturbers of the public peace, not one of these men was known to take part in such disturbances, or to conduct himself otherwise than with propriety. To those gentlemen and agents who were kind enough to find employment for these labourers in time of need, the thanks of the parish are justly due; it would be invidious to mention the names of any of those employers, since all who possessed the means evinced their willingness to assist. We feel assured that the men so employed by them bore out their usual character for honesty and industry.

On Tuesday, the agents went underground, making arrangements for the setting next day; and, on Wednesday, as early as 6 o'clock in the morning, men came flocking in from all parts of the country. Previous to the setting, which took place at 2 p.m., Mr. Taylor spoke to the men assembled—about 1000 in number—of the great difficulty he had met with in getting the business so forward as a setting; he trusted that the men would be peaceable, orderly, and industrious—that there would be a mutual good understanding between the men and agents, and a mutual co-operation in the prosecution of the mine, so that, ultimately, their efforts in working it might prove successful.—*Cornwall Gazette*, of this morning.

NEW METHOD OF TREATING COPPER ORE.

M. Ebelmen made a report to the Society for the Encouragement of Arts and Manufactures, at Paris, in the name of the committee on chemical arts, on a new process for the metallurgical treatment of copper ore, by MM. Rivot and Phillips. The starting point of the researches of which we are about to give an account, arose from the experiments made in England by M. Napier, on the influence of voltaic electricity in the reduction of copper ores. M. Napier completely roasted the sulphuretted copper ore which he employed; he then brought it to a state of complete fusion in a reverberatory furnace, having a black-lead hearth, and caused a very powerful current of voltaic electricity to traverse the fused mass, conducted by means of the black-lead hearth of the furnace, and by a plate of cast-iron kept on the surface of the melted metal, the copper separated in a metallic state from the fused mass. MM. Rivot and Phillips first directed their researches to ascertain what would be the influence of a voltaic current on the sulphuretted copper ores in fusion. We will not enter into the details of their experiments, but content ourselves with stating the results obtained. A voltaic current, furnished by 50 elements of a Bunsen battery, exercised an indubitable decomposing action on the copper ore, and separated the copper in a metallic state. The action of electricity by the dry way, as an agent of decomposition at high temperatures, appeared thus to be clearly established by these experiments. MM. Rivot and Phillips next examined the process of M. Napier, and very soon found out that the coal of the graphite hearth of the furnace, and the plate of cast-iron employed by M. Napier, were alone, and without the intervening aid of electricity, capable of producing all the decomposing effects stated. Starting from this observation, the authors of the new process were led to the results which we are now about to set before the society.

The treatment of the sulphuretted, or pyritic, copper ores, consists in actual every-day practice of a series of roastings and of successive castings. Sometimes these castings are done in a hand-furnace, as at Chessy; sometimes in a reverberatory furnace, as is the mode adopted in Wales. When the ore does not contain more than 8 to 10 per cent. of copper, and much iron pyrites and quartz, which is the more ordinary case, it is essential that the roastings should not first remove the whole of the sulphur, in order that the copper may concentrate itself in the metallic mass—whilst the iron passes off in the slag, in the state of a silicate of the protoxide. If the roasting were pushed too far, the slag would carry with it a notable quantity of copper; and the copper obtained would be contaminated with a large portion of iron. It is necessary, therefore, in ordinary circumstances, to make a series of successive roasting operations and castings, which considerably increase the expenses of fuel and labour. If, therefore, a process can only be devised, by means of which the metallic copper will be obtained in a state of comparative purity with one roasting and casting, it is evident that a very important metallurgical advantage is obtained. Such is the object of the process of MM. Rivot and Phillips. They submit the ores to a roasting, sufficiently complete to desulphurise it fully, and transform the iron and the copper into oxides. They add to the products of the roasting reducing substances, calculated, after an analysis of the ore, in such a manner, that the slag, supposed to be exempt from copper, has near about the composition of a bisilicate of the protoxide of iron and lime, containing about 12 to 15 per cent. of this latter base, and, in addition, a certain quantity of charcoal, or coal, in small pieces—so that the oxygen of the oxide of copper, contained in the ore, may transform this carbon one-half into carbonic acid, and the other half into carbonic oxide. The mixture is thrown on the hearth of a reverberatory furnace, previously raised to a high temperature. After a certain time, the fusion of the materials takes place. The carbonaceous matter already separates a large quantity of copper; and the slag contains but 2 to 3 per cent. of this metal. It is at this point that MM. Rivot and Phillips plunge a certain number of iron bars into the fused mass. These bars, placed horizontally and enveloped by the slag, slowly reduce the remainder of the copper in such a way, that the slag does not contain more than 5-1000 th to 6-1000 ths of metal, after three or four hours' action of the iron bars: the contents of the furnace are now run off.

It is found to be a good plan to keep the surface of the melted mass constantly covered with a thin layer of coal, to prevent the suroxidation of the protoxide of iron. The authors of this process have noticed, that the consumption of metallic iron is thus notably diminished. It will be seen, therefore, that the process of MM. Rivot and Phillips consists in the reduction of the principal part of the copper by coal intimately mixed with it, and the completion of the reduction by means of metallic iron.

The reactions, which serve as the basis of this new process, are well known, it is true; but the manner in which they have been turned to a useful account, so as to produce the two complementary effects of reduction by two different agents, constitutes a process altogether new. Thus, the reduction by coal alone, and in excess, will give a copper containing much iron, if the scoriæ are brought to such a state as to contain but a small quantity of copper; on the other hand, the reduction by iron alone becomes too expensive, on account of the consumption of metal required. It must be added, that iron, in small pieces, cannot be employed to advantage instead of iron bars, because it mixes with the metal, and produces a copper containing too great a proportion of iron.

The consumption of iron, when bars are employed, is, on the average, 11 per cent. of the weight of the copper obtained, where the ore gives 15 to 20 per cent.; this consumption increases in proportion to the poverty of the ore.

To complete the information given above, we will add certain details which we witnessed at a reverberatory furnace, established by MM. Rivot and Phillips at Grenoble.

[*To be continued.*]

CURRENT PRICE OF GOLD AND SILVER.

Foreign gold, in bars	per oz.	£3 17 9	New dollars	per oz.	£0 4 10½
„ Portugal pieces		0 0 0	Silver in bars (standard)		0 4 11½

Contract for Copper.

DEPARTMENT OF THE STOREKEEPER GENERAL OF THE NAVY, Somerset-place, Sept. 18, 1848.

THE COMMISSIONERS FOR EXECUTING THE OFFICE OF LORD HIGH ADMIRAL OF THE UNITED KINGDOM OF GREAT BRITAIN AND IRELAND do hereby give Notice, that, on Thursday, the 28th inst., at One o'clock, they will be ready to TREAT with such persons as may be willing to CONTRACT for SUPPLYING HER MAJESTY'S DOCKYARD, at CHATHAM, with

TWO HUNDRED AND FIFTY TONS OF ENGLISH TOUGH CAKE COPPER.

100 tons thereof to be delivered in three weeks, and the remainder in six weeks, from the day of treaty.

A form of the tender may be seen at the said office. No tender will be received after One o'clock on the day of treaty, nor any noticed, unless the party attends, or an agent for him duly authorised in writing.

Every tender must be addressed to the Secretary of the Admiralty, and bear in the left-hand corner the words "Tender for Copper," and must also be delivered at Somerset-place, accompanied by a letter signed by two responsible persons, engaging to become bound with the person tendering, in the sum of £5000, for the due performance of the contract.

THE IRON TRADE.

The effect of the late settled weather on the iron trade has been to cause some houses who, notwithstanding the low nominal prices, have been selling considerably under them, to approximate nearer to the fixed prices, but beyond this no advance that we can learn of has either been made or is contemplated. Orders from the continent at this period of the year must be limited, and cannot affect the trade, as the shipments cease from October, owing to the ports being closed by frost for the winter. It is more than probable that, upon the opening of the ports in the spring, a considerable demand for the continent will arrive, if political affairs should become more settled. In some branches of the trade, affecting the forges and mills, there is a large demand, but in others orders are exceedingly scarce; and, whilst such a state exists, any attempt at advancing prices would not be wise. The makers of pig-iron are naturally justified in attempting to resume their former position with regard to the makers of merchant or manufactured iron. Owing to the blast furnaces continuing to work during the two months' strike of the forgemen in the early part of this year, the stock of pig-iron accumulated, causing a slight depression in this branch of the trade for a time. That stock is now, however, reduced to a moderate extent, and the makers of pig-iron are now in a position to ask their fair proportionate prices. Some heavy contracts have, we understand, already been made for next quarter, at 3*l.* 2s. 6d. to 3*l.* 10s.; bars being presumed to be at 6*l.* 10s.

The wages of forge and mill men cannot now be considered open to dispute. It is admitted that, according to the present price of iron, wages bear a fair proportion to the price of the manufactured article. The great bulk of the men agreed to work at the recent reduction without a strike, only a few workmen in the neighbourhood of West Bromwich resisting the reduction for a time. Seeing, however, shortly after the unreasonableness of their resistance they also commenced work on the masters' terms. Some uneasiness exists, we are sorry to notice, among the miners of this district, arising out of the exaggerated and incorrect reports which find their way somehow or other to the public press, and also from the circulation of handbills (founded either upon misstatements or misconceptions) among the men. At present, and as long as present prices alone can be obtained, employers, it is clear, are not in a position to advance wages, nor can it be thought that workmen will act wisely in demanding a rise. Should the anticipations of those intimately acquainted with the trade be realised, at the commencement of next year better prices may be expected, and a proportionate advance of wages honestly required.

The pig-iron trade of Scotland has received a slight impetus from a large contract of pipes for Liverpool (it is said to 40,000 tons) having recently been taken at Glasgow; but the extremely low price at which the contract was accepted, is a proof that the Scotch manufacturers are not sanguine as to the state of the trade. The manufactured or malleable iron trade in Scotland is, we understand, at a very low ebb—the very inferior quality of the iron obliging the makers to take very low prices.

In Wales also the demand for bar-iron is not brisk. Orders for rails may be obtained in moderate quantities for low prices; but not to the extent that might at first sight be expected from the resumption of operations on new lines of railway—the rails for most of these lines having been purchased long ago, and in many instances lying in the hands of the manufacturers, ready for delivery the moment the companies are in a position to pay for them. Upon the whole, although we see no reason to doubt that the iron trade may have assumed an improved condition, and that orders, at present prices, to some extent may be expected, still we would recommend great caution as to making any advance in price, and as a matter of course any increase of expense in workmanship. The ruling price, like the ruling price of all other articles, when a money pressure exists, is scarcely remunerative either to master or man. Both suffer; the one in profits, the other in wages—but cessation of trade is not the remedy. At the one instant, when trade stops, the master's capital and machinery is as nothing in the world—and the workman's time and skill as nothing also. Adventitious circumstances may modify these principles, but they are true as the truth can be.—*Wolverhampton Chronicle.*

SAVING LIVES FROM SHIPWRECKED OR STRANDED VESSELS.—We understand that, by direction of the Lords of the Admiralty, an invention of the highest importance (the production of Mr. John Keyse), for rescuing the lives of passengers and crews in cases of shipwreck, is in preparation at the Royal Dockyard, Woolwich, the principle of which (as already described in the *Mining Journal*) is to establish a communication from vessel to vessel, or from the vessel to the shore, thereby establishing the means of saving many hundreds of lives annually on the shores of the kingdom of Great Britain and other countries. It can be most advantageously appropriated for the naval and mercantile marine, and also for important purposes connected with the army.

MIDLAND GREAT WESTERN RAILWAY.—The Midland Great Western Railway Extension, from the Kinnegad station to Mullingar, was inspected on Wednesday last, by Capt. Wynne, R.E., previous to its opening for public traffic on the 1st of Oct. The inspection was very satisfactory, Capt. Wynne having expressed himself in very favourable terms as to the stability and safety of the line. The opening will take place on the above-named day.

RAILWAYS IN IRELAND—THE GAUGE—(*Extract from a Private Letter*).—I have recently been in Ireland, and was struck with the expense which the widening of the gauge has thrown upon railways, which could scarcely pay, if the most rigid economy had been practised. If they had altered the gauge to that of the best railway in Belgium—viz.: from the Tête de Flandres to Ghent,—3 ft. 9 in. (1·1 metre), they would have acted more wisely. The dead weight of engine and carriage in every train in Ireland, compared with the net or paying weight, is prodigious—all which dead weight is most expensive, and of perishable material, requiring constant repair and renewal. I believe this charge might be shown to amount frequently to 9d. per train per mile additional, or 25 per cent. of the *whole earnings* of some trains! Has it not struck you, that there was an absurdity in being guided by the leanings of engine-makers (for leanings, rather than opinions, express the thing), solely as General Pasley was in recommending the 5 ft. 3 in. gauge. Of course, they recommended a gauge which would enable them to construct an expensive engine, for the greater the prime cost of engines, the better for them—just as the carriers, in the beseiged city, recommended the walls to be lined with leather; and, as a proof of this, we see in Ireland engines costing 2500*l.* each, drawing a train (at 20 miles per hour), which, on our gauge, would not weigh 30 tons, and could equally well be drawn by an engine costing 1500*l.*, with less injury to the road. You know that General Pasley arrived at 5 ft. 3 in., by adding 20 opinions together, and dividing by 20. Mr. Brunel scouts the 5 ft. 3 in. gauge as a senseless alteration from the old standard.—*Railway Record.*

CORNISH STEAM-ENGINES.

The number of pumping-engines reported for the month of Aug. is 26—the quantity of coals consumed being 1780 bushels, lifting, in the aggregate, 16,000,000 lbs. of water 10 fathoms high—the average duty of the whole is, therefore, 53,000,000 lbs. lifted 1 foot high by the consumption of a bushel of coal.—The following have exceeded the average:—

Mines.	Engines.	Length of stroke	Load in pounds.	Load per sq. inch. on pist.	Strokes per min.	Consump. of coal in bus.	Million lbs. lifted 1 foot by consump. of 1 bush. coal	Average quantity of water per min.
Great Work	Leeds's 60-in.	9·0	47,020	12·9	8·3	1914	57·9	197
East W. Crofty	Trevenson's 80	10·33	80,938	12·0	3·1	1430	56·9	175
East Pool	—— 60-inch.	9·75	38,524	11·1	3·8	912	53·4	169
Andrew and Nangiles	—— 70-inch.	10·0	51,492	10·7	3·4	1020	56·1	207
United Mines	Taylor's 85-in.	11·0	97,108	13·5	5·5	2690	83·2	
Ditto	Card.za's 90-in.	9·0	99,468	13·7	6·3	3564	56·5	1617
Ditto	Eidon's 30-inch	9·0	13,631	16·0	8·1	500	67·6	
Ditto	Loam's 85-inch	10·0	89,320	11·8	6·3	3198	54·2	
Ditto	Hocking's 85-in	10·0	90,093	14·6	6·1	3513	58·8	
Tywarnhayle	Gardiner's 80in.	10·0	62,517	10·9	8·5	3408	55·4	529
East Wh. Rose	Penrose's 70in.	10·0	58,609	13·6	3·7	1140	70·7	553
Ditto	Michell's 70 in.	10·0	62,699	14·6	3·6	1298	64·7	
Wh. Mary Con.	—— 63-inch	8·66	25,998	8·3	6·4	1056	57·3	276

NEW PATENTS.

R. W. Winfield, Birmingham, merchant and manufacturer, and J. Ward, Birmingham, aforesaid, a workman in the employ of R. W. Winfield, for certain improvements in the manufacture of tubes, and in the manufacture of certain articles made in part of tubes.

W. Sager, Rochdale, wool dealer, for certain improved means and apparatus for effecting the transit or conveyance of goods, passengers, and correspondence by land or water, and for other such purposes; part or parts of which means and apparatus constitute a new improved method of generating steam, which improvement is applicable to other purposes to which steam is generally applied as a motive power.

J. Lille, Manchester, engineer, for certain machinery or apparatus applicable for purifying and cooling liquids, and for purifying, condensing, and cooling gases.

J. Frearson, Birmingham, machinist, for improvements in bending or shaping iron or steel, and other metals.

H. Wilson, foreman to Messrs. W. Greaves and Son, of the Sheaf Works, Sheffield, for improvements in the manufacture of chisels and gouges.

W. B. Roof, of Stanhope-street, Regent's-park, chemist, for certain improvements in the construction of respirators.

DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

F. Pastorelli, Cross-street, Hatton-garden, wheel barometer.

E. Middleton and M. Rettie, London, sanitary urinal, or air trap, for preventing effluvia.

J. Brocklies, Castle Mills, Oxford, brush for dressing flour.

F. Walton and Co., Old Hall Works, Wolverhampton, torricellian shower bath.

E. Smith, Carlisle-street, Soho, spring swivel or hook.—*Mechanics' Magazine.*

Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning Eleven o'clock.

Bank Stock, 9 per Cent., —
3 per Cent. Reduced Ann., 86
3 per Cent. Consols Ann., 86 ⅛ 6
3½ per Cent. Ann., 86⅛ —
Long Annuities, —
India Stock, 10½ per Cent., 234 5½
3 per Cent. Consols for Acct, 86⅛
Exchequer Bills, 1000*l.* 2d. 29 pm.

Belgian, 4½ per Cent., 70⅛
Dutch, 2½ per Cent., 44⅝ 5½
Brazilian, 5 per Cent., 75
Chilian, 6 per Cent., 87
Mexican 5 per Cent., 16⅜ ⅞
Russian, 5 per Cent., 99
Spanish, 5 per Cent, 11⅛ ⅜
Ditto 3 per Cent., 23 ⅛

MINES.—The amount of business actually transacted in the mining share market, during the week, has been rather limited; notwithstanding, there has been an active inquiry for shares in many of the leading mines; but sellers will not conform to buyers' prices.

It appears that our best mines are very generally holding back their ores, anxiously waiting for an improved standard, which we are weekly anticipating, and, when realised, we may reasonably calculate on an improved market.

The directors of the Devon Great Consols declared a dividend of 5*l.* per 1024th share, on Wednesday, arising from the sale of ores in May and June. After payment of the same, there remains a balance in hand, in cash, bills for ores, and exchequer bills, of 13,766*l.* The mine, we learn, continues to present her usual splendid appearances. Buyers are in the market; but the offers made will not reach sellers' quotations; consequently, no business has come off. Certainly, the above announcement will have a different effect.

Condurrow is reported to bid fair to take a leading position; numerous have been the inquiries for shares, at advanced prices; but no transfers have been made here, the holders being chiefly in the locality.

South Wheal Basset and Treviskey and Barrier have been much sought for; in the latter, several shares have changed hands.

Several transactions have taken place in Mary Anns, at an advance, in consequence of a reported improvement.

We learn that the directors of Mendip Hills have completed a negociation for an extensive piece of ground contiguous to their mine, in which a large quantity of slag is represented to be deposited, the reamelting of which is now the main object of the company. A large number of shares have been purchased in consequence.

Shares in the following mines have changed hands since our last—viz.: Treviskey and Barrier, Mary Ann, Herodsfoot, Trehane, Tregordon, South Trelawny, Stray Park, Carwinning Hill, Mendip Hills, Tremayne, West Providence, and East Crowndale.

Wheal Trelawny adventurers held their bi-monthly account meeting (for June and July) on Tuesday last. The balance-sheet presents a profit of 202*l.* 8s. on the two months' working, which, with 94*l.* 9s. 10d., left on the previous account, is carried to the credit of the mine. It appears that 180 tons 18 cwts. of silver-lead ores were sold, realising 2570*l.* 15s. 6d.; and August ores, computed at 94 tons, sold, on Monday last, at 15*l.* 15s. per ton. The agent's report represents the mine in a very favourable position.

Mary Ann two-monthly meeting (for June and July) was held on Wednesday last. The statement shows a loss of 218*l.* 14s. 9d. on the two months' working; but from the improvements in the mine, even since the meeting, there is every reason to calculate on the balance being in favour of the company at the next account.

Trehane account meeting was to have been held yesterday—the result, of course, we have not received.

South Roskear account meeting was held on Tuesday last, when a loss of 36*l.* on the two months' working was represented. The mine is reported to be looking remarkably well.

Wheal Anderton adjourned meeting was held on Monday last, for the appropriation of the forfeited shares, when it appears that 34 were taken up by the shareholders, at the fixed price of 15*l.* per share. The report furnished by the captain is very encouraging.

Reports of the meetings of the Botallack, Coombe Valley, Blaenavon, &c., companies, will be found among our Mining Correspondence.

In the present unsettled state of the law, as to shareholders' liability, under the Cost-book System, we believe the arrangements of the Cornwall New Mining Company—that their shareholders shall not incur any liability—will be approved of; indeed, we have heard of their shares, in consequence, being applied for as an investment. It is a method of conducting mining business we should like to see more generally followed.

The leading article of the *South Australian Gazette*, of the 1st April last, received this week, is directed against the London management of the Australian Mining Company in rather strong language, and attributing to the laudable exertions of the local committee the salvation of the company. Some of the questions, we think, cannot be responded to with equal sincerity; still we believe that the directors, however premature in the exercise of an erroneous judgment, have manifested a deep interest in the welfare of the company. If the chartering of vessels in England, for the conveyence of the ores home, before any were raised at the mines, be an error, it may be attributed to an excessive anxiety to see Australian copper, as well as to meet the expenditure of a fast ebbing exchequer. The mines are now stated to be in a highly productive position; and we wait with some interest for the next advices to confirm the last reports. We also trust that a feeling of mutual confidence may henceforth exist between the London and local managements for the general benefit of all concerned. Should this company pay and continue a dividend, or the shares keep to a premium, we believe it will prove an isolated instance among the numerous foreign mines established at the expense of millions of British capital—*i. e.*, upon the original outlay: an extract will be found in another column.

In the foreign share market there has been a little activity, especially for Australian Mining Company's shares, and a great many have changed hands at an advanced and improving premium; this demand, we learn, has resulted from the confirmation of the discoveries furnished by private letters, no official dispatches having been received, although daily expected. United Mexican, Imperial Brazilian, Bolanos, Alten, Kinzigthal, St. John del Rey, and Santiago, have also changed hands.

The following arrivals of specie have taken place since our last—viz.: By the Peninsular and Oriental Steam Navigation Company's ship, *Jupiter*, which arrived at Southampton, on Saturday, the 16th, 66 packages of specie have been received—value, about 20,000*l.* The *Free Trade*, from Oporto, with 12 boxes of bullion; the American line of packet ships, *Switzerland* and *American Eagle*—the former 1 box of specie, and the latter 3 packages of specie; and the *Oriental Queen*, from the Mauritius, 1 box of bullion.

RAILWAYS.—There is not much change in the general aspect of the share market. In some instances a tolerable advance has taken place on the prices which could be obtained by sellers a day or two ago; but, on the other hand, several have suffered a fractional decline, but not in any case sufficient to call for more specific allusion. The general bearing of the market, therefore, may be viewed favourably, as a presage of the return of confidence.

HULL, THURSDAY.—The share trade continues in the same dull and uninteresting state and, since last *Mining Journal*, prices have again declined to an extent sufficient to exhaust the patience of the most sanguine holders. There is a slight change for the better to-day, but we cannot report any disposition to buy, either for investment or speculation. If the North British people mind what they are about, we believe they will get the same terms as the Newcastle and Carlisle—that is, 6 per cent. for three years, and 7 per cent. afterwards; but if they are inclined to take less favourable terms, of course, Mr. Hudson will meet their wishes.—Local stocks quite neglected.

RAILWAY TRAFFIC RETURNS.

Name of Railway.	Lgth. ftway.	Present actual cost.	Price per share	Last Div.	*Traffic Returns.* 1848	1847
Belfast and Ballymena	39	——	—	—	£415	—
Birkenhead, Lancashire, & Chesh.	19	997,284	37	5*p. c.**	874	825
Caledonian	141	3,993,732	20½	—	5107	—
Chester and Holyhead	84	2,871,470	21⅝	4	—	—
Dublin and Drogheda	25½	774,875	28	—	798	943
Dublin and Kingstown	7½	395,915	—	6	1008	918
Dundee, Perth, & Aberdeen Junc.	47½	544,554	25	8	1009	930
East Anglian (Lynn to Ely)	55½	1,167,104	4⅝	—	807	1054
East Lancashire	33½	1,733,915	16	5	1308	—
Eastern Counties and Norfolk	295	10,364,505	13½	4	16215	14542
Eastern Union	51½	1,522,232	20	7½	1410	1238
Edinburgh and Glasgow	57½	2,556,889	39½	6	4463	4194
Edinburgh and Northern	48½	1,722,213	15½	4*	2035	—
Glasgow, Paisley, and Ayr	70	2,286,353	60	6	2910	2762
Glasgow, Paisley, & Greenock	22½	845,545	14⅜	4	1190	1337
Gt. Southern & Western, Ireland	131	1,809,787	22½	4*	3325	2057
Great Western	286⅜	11,311,069	78½	7	21284	21914
Kendal and Windermere	10½	174,600	23	—	204	222
Lancaster and Carlisle	70	1,476,102	44	4	2442	1630
Lancashire and Yorkshire	172½	8,242,628	86	6	14559	11464
London and North Western	435	32,835,120	110	7	46818	45163
London and Blackwall	4	1,299,675	4⅛	⅛	1215	1056
London, Brighton, & South Coast	163½	6,284,812	37	2⅜	11531	1187
London and South-Western	215	7,139,733	38⅛	6	14565	10868
Londonderry and Enniskillen	14½	154,643	16	5	119	110
Manchester, Sheffield, & Lincolnsh.	62½	4,651,093	47	5	3668	2474
Maryport and Carlisle	28	443,974	40	—	605	673
Midland Company	423½	13,254,006	84½	6	25387	24163
Midland Great Western (Irish)	36½	725,332	10½	4*	1053	807
North British	82	3,163,460	18½	5	3021	2640
Scottish Central	45	1,345,496	23½	—	1465	—
Shrewsbury and Chester	23	780,272	11⅛	6	849	512
South Devon	50½	1,789,351	14	5	1866	1058
South-Eastern	165½	7,389,322	24	6⅜	10689	11813
Taff Vale	38	820,056	125	6	2142	1795
Ulster	36	684,684	43⅜	4⅜	777	866
Whitehaven Junction	19	180,879	9⅜	4⅛	209	206
York, Newcastle, & Berwick	269	5,038,255	37	8	13843	12616
York and North Midland	234	4,179,309	55⅞	8	10044	9388

* Interest.—Total for last week, 220,272*l.* being an increase of £23,191*l.* over last year.

PRICES OF MINING SHARES.

BRITISH MINES.

Shares.	Company.	Paid.	Price.
1000	Abergwessin	7 ..	—
512	Albert Consols	1 ..	9⅛
1024	Alfred Consols	4⅛ ..	2½
235	Andrew and Nangilles	28½ ..	5
1000	Antimony and Silver-Lead Mining & Smelting	5 ..	6½
1024	AshburtonUnited Mines	8½ ..	10
1624	Balleswiddon	9 ..	18
128	Balnoon Consols	25 ..	28
10000	Banwen Iron Co.	6 ..	6¾
1000	Barristown	4¼ ..	1
4000	Bedford	2⅝ ..	2
1244	Birch Tor Tin Mine	9½ ..	1½
8000	Blaenavon	50 ..	17½
100	Botallack	175 ..	60
120	Brewer	5 ..	7
10000	British Iron, New, regis.	10 ..	13
—	Ditto ditto, scrip	10 ..	10
128	Budnick Consols	52½ ..	35
128	Callestock	17 ..	10
1000	Callington	19 ..	20
1000	Camborne Consols	5 ..	12
20000	Cameron's Steam Coal	6 ..	1
256	Caradon Copper Mine	9½ ..	2
256	Caradon Mines	22½ ..	10
256	Caradon United	24 ..	5
256	Caradon Wh. Hooper	21 ..	10
1000	Carn Brea	15 ..	95
3000	Carthew Consols	1½ ..	5
2048	Cascade	1 ..	—
112	Charlestown	220 ..	60
512	Coatlithe Hill	⅛ ..	⅛
500	Comblawn	5½ ..	6
128	Comfort	45 ..	37
256	Condurrow	20 ..	40
2560	Cook's Kitchen	14 ..	2
1000	Coombe Valley Quarry	3½ ..	4½
6500	Cornish Mining Co.	2 ..	2⅜
20000	Cornwall New Mining	1 ..	1
1000	Copper Bottom	1½ ..	6½
1024	Cosheen	4½ ..	20
225	Craddock Moor	16⅜ ..	5
128	Creeg Braws	120 ..	100
500	Cubert Mine	12½ ..	10
1000	Cwm Erfin	3½ ..	1½
300	D. Prior & Buckfastleigh	14 ..	26
7100	Derwent	8⅜ ..	5
845	Devon&CourtenayCon.	7⅜ ..	⅜
1024	Devon Great Consols	1 ..	205
1000	Dhurode	2 ..	5
186	Dolcoath	30 ..	15
2560	Drake Walls	4 ..	4
10000	Durham County Coal	45 ..	9
3000	Dyfngwn	10 ..	12½
512	East Alvenney	5½ ..	12½
112	East Caradon	47 ..	47
2048	East Crowndale	5½ ..	2½
512	East Combe Silver-Lead	6½ ..	6½
128	East Pool	5 ..	10
100	East Relistian	22 ..	40
9000	East Tamar Consols	⅜ ..	⅜
—	East Wheal Albert	1 ..	3
94	East Wheal Crofty	125 ..	280
1024	East Wheal Fortune	2 ..	3
1024	East Wheal Friendship	3 ..	3½
128	East Wheal Rose	50 ..	800
—	East of Scotland Iron Co.	2½ ..	1½
123	East Wheal Seton	14 ..	10
256	Exmoor Wh. Eliza	5 ..	8–10
512	Fowey Consols	40 ..	45
1024	Freidd Llwydd Mines	1½ ..	3½
6400	Gadair	2 ..	2
20000	Galvanised Iron Co.	10 ..	1½
4000	Gen. Mining Co. for Irel.	1½ ..	1½
2048	Goldscope Mine	2 ..	2
256	Gonamena	34 ..	5
128	Goonvrea	4 ..	2
100	Great Consols	1000 ..	400
1690	Great Michell Consols	1½ ..	⅛
256	Great Resugga Moor	11 ..	6
512	Gt. Wh. Rough Tor Con.	18½ ..	16
1200	Growa Slate Company	5 ..	5
256	Gwinear Consols	7 ..	3
6000	Heigneton Down Con.	⅛ ..	2⅛
256	Herodsfoot	18 ..	25
10000	Hibernian	12½ ..	1½
239	Hobb's Hill	6 ..	1½
1000	Holmbush	19 ..	1½
827	Kirkcudbrightshire	5½ ..	2
2048	Lamheroog Wh. Maria	11 ..	1
128	Lelant Consols	90 ..	60
160	Levant	— ..	120
1000	Lewis	15 ..	5½
1000	Llwyn Malees	5 ..	—
3600	Llynvi Iron	50 ..	50
256	Lostwithiel Consols	15 ..	15
6000	Marke Valley	10 ..	2
8000	Mendip Hills	2½ ..	1
5000	Merionethshire SlateCo.	1½ ..	2
128	Metha	34 ..	133
20000	Mining Co. of Ireland	7 ..	4½
256	New East Crowndale	3⅝ ..	2½
128	North Fowey Consols	37 ..	10
100	North Pool	45 ..	390
140	North Roskear	5½ ..	120
262	North Wh. Leisure	1½ ..	2
15000	Northern Coal Co.	23 ..	2
128	Par Consols	— ..	1009
1000	Pennant	2 ..	1
100	Penrhiw	30 ..	65
1024	Penzance Consols	16s 3d. ..	1
1280	Perran St. George Un.	13 ..	20
128	Perran Wh. Virgin	5½ ..	10
512	Plymouth Wh. Yeoland	6½ ..	15
256	Polsaith Consols	4½ ..	4½
10000	Rhymney Iron	50 ..	13
10000	Ditto New	7 ..	6½
1000	Rosewall Hill	1 ..	5
256	Rosewarva Mines	— ..	12
128	South Caradon	10 ..	350

BRITISH MINES—*continued.*

Shares.	Company.	Paid.	Price.
1100	South Dolcoath	4 ..	4
256	Sth. Friendsh. Wh. Ann	20 ..	⅛
256	South Molton	5 ..	8–10
256	South Tolgus	10 ..	52½
256	South Trelawny	20 ..	6
128	South Wheal Basset	110 ..	119
256	South Wh. Betsey	2½ ..	12½
124	South Wh. Frances	160 ..	200
1000	South Wh. Maria	2½ ..	1½
10000	Southern & Western, Irish	2 ..	4
280	Spearne Moor	30 ..	40
256	St. Austell Consols	9 ..	—
94	St. Ives Consols	— ..	320
128	St. Michael Penkivel	5 ..	10½
999	St. Minver Consols	1 ..	6
1000	Stray Park	43 ..	15
9600	Tamar Consols	3 ..	5½
1024	Tavy Consols	4 ..	8
6000	Tincroft	7 ..	5
1000	Tin Vale	2½ ..	3½
128	Tokenbury	153½ ..	10
256	Tollpetherwin	3½ ..	5
256	Tregordan	1 ..	7
256	Trehane	24 ..	26½
5000	Treleigh Consols	6 ..	1½
2000	Trenance	3 ..	18
96	Trevavean	10 ..	210
120	Trethellan	5 ..	15
120	Treviskey and Barrier	130 ..	82–85
288	Trevean	1½ ..	5
100	United Mines	300 ..	350
256	Wellington Mines	15 ..	10
128	West Basset	45 ..	7
256	West Caradon	20 ..	65
128	West Cargoll	2 ..	12
512	West Fowey Consols	40 ..	15
256	West Providence	9 ..	12
200	West Seton	40 ..	180
—	West of Scotland Iron Co.	210 ..	210
120	West Trethellan	5 ..	30
256	West United Hills	— ..	4½
512	West Wheal Frances	1½	2
256	West Wh. Friendship	9 ..	8
8725	West Wheal Jewel	11 ..	1½
256	West Wheal Tolgus	21½ ..	3½
256	West Wheal Treasury	19 ..	8
5200	Wicklow Copper	5 ..	8½
184	Wheal Adams	51 ..	10
1000	Wheal Agar	— ..	8
256	Wheal Albert	10 ..	1
256	Wheal Allen	2 ..	5
300	Wheal Anderton	23 ..	15
128	Wheal Ann	— ..	50½
512	Wheal Anna Maria	6⅛ ..	8
1024	Wheal Ash	4⅛ ..	8
120	Wheal Bal	5½ ..	20
2560	Wheal Barbara	1⅛ ..	—
256	Wheal Blencowe	21 ..	5
256	Wheal Bucketts	20 ..	5
256	Wheal Calstock	5 ..	10
136	Wheal Clifford	190 ..	50
1024	Wheal Coad	⅛ ..	12½
268	Wheal Courtenay	12½ ..	15
256	Wheal Fortescue	6½ ..	5
388	Wheal Franco	27 ..	18
128	Wheal Harriet	45 ..	50
256	Wheal Jane	21 ..	15
1024	Wheal Lawrence	2⅛ ..	6
256	Wheal Louisa	8⅛ ..	8
112	Wheal Margaret	79 ..	250
512	Wheal Mary Ann	5 ..	14
237	Wheal Mary Consols	12½ ..	5
—	Wheal Peninsula	— ..	12
210	Wheal Prospect	4 ..	7
120	Wheal Reeth	41 ..	150
128	Wheal Rose	60 ..	5
99	Wheal Seton	214 ..	650
194	Wheal Sisters	32½ ..	12
512	Wheal Sophia	3⅛ ..	5
128	Wheal Spearne	10 ..	75
128	Wheal St. Ann	30 ..	35
550	Wheal Trescoll	3 ..	10
260	Wheal Trelawny	7½ ..	55
256	Wh. Tremaine (St. Erwan)	7½ ..	4
1024	Wheal Tremayne	35 ..	1½
92	Wheal Tryphena	140 ..	265
242	Wheal Venland	29½ ..	30
256	Wheal Vlow (Perranz.)	⅜ ..	⅜
184	Wheal Vyvyan	— ..	60
250	Wheal Williams	28½ ..	8
1024	Whiddon Mines	4⅛ ..	4⅛

FOREIGN MINES.

5000	Alten Mining Company	14⅛ ..	2⅛
15000	Asturian Mining Co.	13 ..	2½
20000	Australian	2½ ..	5⅛
10000	Anglo-Mexican Co.	100 ..	⅛
12374	Ditto Subscription	25 ..	2¼
6000	Barossa Range	⅛ ..	1
3000	Bolanos	150 ..	2½–⅜
2000	Ditto Scrip	15 ..	3
12000	Brazilian Imperial	23 ..	4½
10000	Cobre Copper Co.	40 ..	13½
10000	Copiapo Mining Co.	14 ..	2
10000	General Mining Ass'n.	20 ..	11
5000	Kinzigthal Mining Ass.	2 ..	3
20051	Mexican Company	59 ..	—
2000	Mexican & South Amer.	6 ..	⅛
5000	National Brazilian	30 ..	3½–5½
100000	N. Brit. Australasian	1 ..	⅛
29320	{ Rl. del Monte, regis. / Ditto unregistered }	28½ ..	⅛
	Ditto Red Debentures	— ..	5
	Ditto Black ditto	— ..	3
	Ditto Loan Notes	150 ..	26
7000	Royal Santiago	10 ..	4
11000	St. John del Rey	15 ..	7
43174	United Mexican	Av. 28 ..	2½

SOUTH AUSTRALIAN SHARE MARKET.—MARCH 31.

Company.	*No. of Shares.*	*Capital.*	*Paid-up.*	*Present Price.*
Burra Burra	2464	£12,320	£12,320	£150 0
Princess Royal	400	20,000	14,800	40 0
Mount Remarkable	1000	25,000	22,500	17 0
Adelaide	2000	10,000	10,000	3 0
North Kapunda	436	21,800	21,800	15 0
Royal Mining Company	10000	100,000	10s. p. sh.	0 14
Enterprise	1000	3,000	£2,000	2 10
Greenock Creek	300	1,000	1,000	6 0
Montacute	100	5,500	5,500	55 0
Paringa property, per acre				3 10

*** *We should feel greatly obliged by agents, or others interested, furnishing us with such corrections for our Share List as we may not have received through our usual channels of information—our object being, to present as accurate a list of prices as can be obtained—to procure which, we solicit the aid of correspondents in general.*

LATEST CURRENT PRICES OF METALS.

LONDON, SEPTEMBER 22, 1848.

		£	s.	£	s.	d.
IRON	Bar *a*..Wales...*ton*	5	10	5	12	6
	,, ..London ..	0	0	6	12	6
	Nail rods ,, ...	0	0	7	12	6
	Hoop (Staf.),, ...	8	5	8	10	0
	Sheet ,, ,, ...	9	5	9	10	0
	Bars ,, ,, ...	7	10	8	0	0
	Welsh cold-blast foundry pig *c*	3	10	4	0	0
	Scotch pig *b*, Clyde	2	5	2	6	0
	Rails, average	0	0	6	0	0
	Chairs	0	0	4	0	0
	Russian, CCND *c*..	0	0	17	0	0
	,, PSI ...	0	0	—	—	—
	,, Gourieff	0	0	—	—	—
	,, Archangel	0	0	13	0	0
	Swedish *d*, on the spot	10	15	11	0	0
	,, Steel, fagt.	0	0	15	0	0
	,, ,, kegs *e*	0	0	13	10	0
COFFEE	—Tile *f*	0	0	78	10	0
	Tough cake	0	0	79	10	0
	Best selected	0	0	82	10	0
	Ordin. sheets, *lb*...	0	0	0	0	9

		£	s.	£	s.	d.
COPPER	—Ord. bottoms ..	0	0	0	0	10
YELLOW METAL SHEATHING		0	0	0	0	7½
TIN	—Com. blocks *g*...*cwt.*	0	0	3	13	0
	,, bars	0	0	3	14	0
	Refined	0	0	3	18	0
	Straits *h*	3	12	3	13	0
	Banca	3	13	3	15	0
	ditto for arrival...	0	0	—	—	—
TIN-PLATES	—Ch., IC *i*, *box*	1	8	1	10	0
	,, IX ...	1	14	1	16	0
	Coke, IC	1	5	1	6	0
	,, IX	1	11	1	12	0
LEAD	—Sheet *k* .....*ton*	0	0	17	0	0
	Pig, refined	0	0	18	0	0
	,, common	16	0	16	10	0
	,, Spanish, in bd.	0	0	16	0	0
	Red	0	0	18	5	0
	Dry White	0	0	22	15	0
	Shot (Patent)	0	0	19	5	0
SPELTER	—(Cake) *l* on spot	0	0	14	5	0
ZINC	—(Sheet) *m* export.	20	0	21	0	0
QUICKSILVER *n*		*lb.* 0	0	0	3	6

a Discount 2½ per cent. *b* Net cash. *c* Discount 2½ per cent. *d* Ditto *e* In kegs ½ and ¼-inch. *f* Discount 3 per cent. *g* Ditto 2½ per cent. *h* Net cash. in bond. *i* Discount 3 per cent. *k* Ditto 2½ per cent. *l* Net cash. *m* Discount 14 per cent. *n* Discount 1½ per cent.

REMARKS.—Iron of all descriptions continues as last quoted, with a limited demand. Copper, lead, and tin-plates, are without change in price. Tin continues in moderate request since prices were arranged. In spelter there has been very little business, holders ask the prices quoted, but there are no buyers at that rate.

THAMES TUNNEL COMPANY.

The number of passengers who passed through the Tunnel in the week ending Sept. 16 was 16,114; amount of money, £67 2s. 10d.

LEAD ORES.

TICKETINGS FOR ABOUT 100 TONS LAXEY LEAD ORE.

Douglas, Isle of Man, Sept. 16, 1848.

Buyers.		*Price per ton (31 cwts.)*
Walker, Parker, and Co.	—Chester River	£17 13 6
Mather and Co.	ditto	17 1 0
Newton, Keates, and Co.	ditto	16 10 0
Sims, Williams, and Co.	—Llanelly	16 4 0
Tamar Smelting Company	—Tamar River	16 5 6
Thomas Somers	—Bristol	16 1 6

[Messrs. Walker, Parker, and Co. were declared the buyers.]

TICKETINGS FOR ABOUT 100 TONS (20 cwts.) NEWTONARDS LEAD ORE.

Douglas, Isle of Man, Sept. 16.

Buyers.	*Offer per ton.*
Thomas Somers—Bristol	£8 6 0
Tamar Smelting Company—Tavistock	8 5 6
Newton, Keates, and Co.—Liverpool	8 5 0
Walker, Parker, and Co.—Chester	8 4 0
Sims, Willyams, and Co.—Llanelly	7 13 6

Sold at Listeard, Sept. 18, 1848.

Mines.	*Tons.*	*Prices.*	*Purchasers.*
Wheal Trelawny	94	£15 15 6	Tamar Smelting Co.
Amount of money		£1442 17s.	
Sold at the Mine.			
East Wheal Rose	75	£11 1 6	Sims, Willyams, & Co.
ditto	60	11 7 6	ditto
ditto	50	11 12 0	ditto
Llanfair	42	23 11 6	Tamar Smelting Co.
Total tons	227.		
Sold at Aberystwith.			
Goginan	35	£13 3 0	Newton, Keates, & Co.
ditto	65	13 18 0	Walker, Parker, & Co.
Frongoch	80	8 16 0	ditto
Graigoch	33	8 5 0	Newton, Keates, & Co.
Total tons	213.		
Sold at Truro.			
Callestock	55	£10 5 0	Walker, Parker, & Co.

BLACK TIN.

Sold on the 18th September, 1848.

Mines.	*Tons cwt. qrs. lbs.*	*Price per ton.*	*Amount.*	*Purchasers.*
Ashburton United	5 5 0 11	£42 15 0	£224 12 1	Calenick Co.
ditto	0 9 2 19	34 12 6	16 14 9	ditto
Total—5 tons 14 cwts. 3 qrs. 2 lbs.—Amount of money, £241 7s. 8d.				

COPPER ORES.

Sampled August 17, and Sold at the Royal Hotel, Truro, Sept. 21, 1848.

Mines.	*Tons.*	*Price.*
Devon Gt. Cons. / Wh. Josiah	100	£6 2 6
ditto	98	5 3 6
ditto	68	6 0 6
ditto	66	5 5 0
ditto	40	7 16 0
ditto	31	5 16 0
Wh. Fanny	99	4 1 6
ditto	97	5 8 0
ditto	95	5 3 6
ditto	82	3 17 0
ditto	70	5 18 6
ditto	65	5 10 0
ditto	62	4 13 0
ditto	60	4 10 0
ditto	53	4 15 6
ditto	46	4 18 6
ditto	17	2 16 0
Wh. Maria	90	6 6 6
ditto	57	5 16 0
Wh. Anna Maria	58	4 16 0
ditto	50	4 15 0
West Caradon	102	£6 12 0
ditto	59	7 3 0
ditto	56	6 12 6
ditto	45	10 2 6
ditto	42	3 10 6
ditto	36	10 10 0
Fowey Consols	89	7 0 6
ditto	74	6 15 6
ditto	72	5 18 9
Wh. Friendship	103	8 9 6
ditto	83	8 0 6
ditto	40	3 15 0
Poldice	52	3 19 6
ditto	35	4 9 6
ditto	28	3 14 6
ditto	11	2 15 0
Bedford United	101	6 0 6
Charlestown United	78	7 18 6
Wh. Maiden	35	3 14 0
Wh. Williams	31	3 12 0
Wh. Jewel	22	3 16 6

TOTAL PRODUCE.

Devon Gt. Cons. / Wh. Josiah / Wh. Maria / Wh. Fanny / Wh. Anna Maria	1404	£7375	14	6		
West Caradon	340	2447	14	6		
Fowey Consols	235	1551	7	6		
Wh. Friendship	223	£1664	18	6		
Poldice	126	497	17	6		
Bedford United	101	608	10	6		
Charlestown United	75	594	7	6		
Wh. Maiden	35	129	16	0		
Wh. Williams	31	111	12	0		
Wh. Jewel	22	84	3	0		

Average Standard ..... £8 8l 5 0 | Average Produce 10⅛

Average Price per ton £5 1 0

Quantity of Ore ..... 2592 tons. | Quantity of Fine Copper, 273 tons 0 cwts.

Amount of Money £15,065 15 6

LAST SALE.—Average Standard ..... £8 5l 7 0.—Average Produce 9¼

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
Mines Royal	134	£636 5 0
Viv

Price 10s. 6d., large 8vo., in cloth,

ON THE CONNEXION OF GEOLOGY WITH TERRESTRIAL MAGNETISM:

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By EVAN HOPKINS, C.E., F.G.S.,

With Twenty-four Plates. 42

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NOTICES TO CORRESPONDENTS.

*** We should feel obliged to all pursers, captains, or adventurers, to forward particulars of meetings, &c., of the mines with which they may be connected, on the earliest opportunity, that they may be published in the Journal with as little delay as possible.

We must impress upon our correspondents, the necessity of invariably furnishing us with their names and addresses; not that their communications should, consequently, be noticed, but as an earnest to us of their good faith.

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THE MINING JOURNAL

Railway and Commercial Gazette.

LONDON, SEPTEMBER 23, 1848.

The MINING JOURNAL is published at about Eleven o'clock on Saturday morning, at the office, 26, Fleet-street, and can be obtained, before Twelve, of all news agents, at the Royal Exchange, and other parts of London.

The week just concluded has outdone every one of its predecessors, as far as we are aware of, in the extent of its copper ore importations. The port of Swansea has received into its waters six ships, laden with the rich ores of Cuba—viz.: The *Sunbeam*, 372 tons; the *Circassian*, 430 tons; the *Thomas Bell*, 480 tons; the *Pearl*, 540 tons; the *Henrietta*, 580 tons; and the *Sir I. L. Goldsmid*, 446 tons—altogether amounting to 2848 tons. There is some work, at least for the furnace-masters of Swansea, and some good wages, we trust, for the labouring classes in that improving district. The prices, we regret to state, both of rough and refined copper, have been descending for some time past, whether fairly—or as the result of a combination to that end, we cannot take upon ourselves to say positively. We think it not at all unlikely, however, that the depreciation arises partly out of the excess of the supply over the demand; and, in that case, nothing can be more certain, nothing more reasonable, than the lowering of the market value of copper in all its forms. Advantage will very likely be taken of this temporary glut of the market, to rail at the new law, regulating the importation of foreign and colonial ores, as having been the efficient cause of the excess complained of. It rather furnishes an occasion to observe, that the growth of popular elements throughout the commercial world, has rendered a series of concessions to popular interests imperatively necessary, unless we were willing to see society at large rushing into anarchy, or its foundations torn up by the roots. To avoid an occasion, or an excuse, for so great an evil, we have liberated commerce from her restrictive and artificial bonds, and facilitated the profitable intercourse of nations. The docks and quays of Swansea attest the success of those endeavours. The scope and objects of our legislation were imperial: in revising our commercial laws, the purposes of our legislature were co-extensive with our commerce and our dominion; and we confidently expect that, however parts may temporarily suffer, the result of the change, when it has fairly leavened all our commercial relations, will be favourable and beneficial to all.

In another column will be found the substance of a paper, read by CHAS. WYE WILLIAMS, Esq., at the last monthly meeting of the LIVERPOOL POLYTECHNIC SOCIETY, on the important question of the prevention of smoke from the chimneys of our large manufactories in populous towns. This subject, though it has long been an arena for the display of much argument, ingenuity, and mechanical invention, has now become doubly interesting, from its having formed a large portion of the labours and inquiries of the Sanatary Commissioners, and from the fact of the Town Council of Liverpool having taken the necessary steps, under the Act, for ridding this important and populous community from the increasing nuisance. The arguments, if such they can be called, of those manufacturers, who memorialised the council, go for nothing, as there is evidence before their eyes in Liverpool, as well as hundreds of instances in various parts of the kingdom, that there are means of abating the nuisance; and that by this prevention of the escape and loss of such an enormous mass of unconsumed carbon, which we hourly see issuing from our engine chimneys, a vast saving of fuel is effected. We have here in London, during the past four or five years, witnessed the operation of several patented furnaces, for the prevention of smoke, of which two, at least, were completely successful, and employed at numerous establishments. We here allude to those of "JUKES" and "COUPLAND"—the former having revolving fire-bars, by which the incandescent fuel is gradually carried towards the bridge, and fresh fuel being laid in the space in front, the gases evolved pass over the bright portion of the fire, the carbon takes up its full dose of oxygen, and the products of the chimney are invisible carbonic acid, steam, and nitrogen. In the latter, the fire-bars are so arranged, as to have every additional portion of fuel fed *beneath* the incandescent mass instead of *above*, as in the common method; and here the same results are produced. In every case, however, a full and efficient supply of pure air is necessary; and whether as applied to his own patent furnace, or to others, as it can be with the greatest advantage, Mr. WILLIAMS's principle acts as a perfect regulator for supplying the necessary quantity of oxygen. From the experiment on the *Trafalgar*, Dublin steamer, it appears that the saving in fuel was 13 cwts. per hour out of 38 cwts., the quantity consumed before the alteration, or 33 per cent., with a considerable increase in the generation of steam, and no nuisance from smoke; and surely where there is neglect, or refusal, for the sake of a few pounds, to realise such advantages, and, at the same, abate a vast public nuisance, no one can, with any commisseration from others, complain, if, after such oft-repeated and general notice, the full penalties are enforced against them.

Mr. WILLIAMS has long been an ardent and persevering advocate in the cause; as a scientific chemist, he knows that fuel may be entirely consumed with as much facility, and a great saving, as it is by the vast majority of our furnaces only half consumed, and the nuisance of dense black smoke avoided. He has, it is true, patented the invention; but we believe that he seeks no advantage on this head—his great object being, to see the nuisance entirely prevented and science advanced. He has generously made the invention patent to the public, and for which he richly merits the support and thanks of the whole community.

THE COPPER AND LEAD DUTIES BILL.

[Continued from last week's Mining Journal.]

Colonel DUNNE appealed in vain to the House for the continuance of that (real) "justice to Ireland," which is withheld, in this time of paucity of labour, apprehended scarcity, and consequent distress. The hon. Member for Portarlington stated, in strong terms, the menaced consequences to thousands of his poor countrymen, dependent upon the copper mines of Ireland; and pleaded for the continuance to them of their means of support, by the rejection of the Government measure. But what signifies the comfort, or even the lives, of thousands of our poor and industrious fellow-countrymen to the Ministers and their conniving supporters of free trade crotchets, compared with the maintenance of the mania in all its force—and with filling still more the bursting purses of the smelters, and the slave-supporting companies of Cuba? To make the rich, richer, and the poor, poorer, even to the point of starvation or death, would almost seem to be a favourite object with our present rulers. To borrow from our restless neighbours, they would, without exaggeration, seem ready to say—"*A bas le peuple—mais vive le commerce libre.*"—"Down with the people, perish the multitude, but free trade for ever."

The pointed (or *pointing*) remarks of Mr. ROBINSON, when, in addressing himself to the Treasury bench and its backers, he said, "he had no hope that fact, argument, or justice would win over a vote on that side,"—had the advantage of strict truth, and a full knowledge of those to whom he directed the observation. The hon. Member for Poole also stated correctly, that "the error of the free-traders, he thought, was in attaching an undue importance to the consumers, as contradistinguished from the producers of the country. Now, in his opinion, if cheapness was produced at the expense of the producer, the effect would ultimately be, to place the consumer, notwithstanding the cheapness, in a worse position than before. That was his reason for supporting the principle of protection."

Lord GEORGE BENTINCK strongly and justly animadverted upon the inconsistency of the CHANCELLOR of the EXCHEQUER; and was somewhat jocosely severe in his comments upon that extraordinary and equally inconsistent course of Mr. SPOONER, which need not here be enlarged upon. His lordship warned Government of the consequences that might result, both in Ireland and Cornwall; and he read extracts from a letter from that county, upon the subject, which will well bear repetition, so pointedly and justly did the writer of it direct attention to the effect of the measure in that district. The letter entered upon the question certainly without exordium:—"Is the Government mad, and will they throw our unfortunate county into a state of open insurrection by their acts? You know the people of this district well. You know their loyalty—their intelligence—their patient endurance of severe labour—their extreme temperance, and natural contentedness under circumstances of even more than ordinary suffering. These are qualities which, in a peculiar manner, distinguish the Cornish miner and general labourer. But you know, also, that, with all their industry, their loyal feelings, the high order of their intelligence as labourers—the consequence of the necessary requirements for the effectual prosecution of their labour—there is mixed up a determination of character, which suffering will call into action; and which it will be dangerous to test or tamper with beyond a given point. Thousands of miners and others, with their families, are past the state of common suffering—they are approaching one of starvation; and what results from the hungry belly of the willing and industrious workman, urged on by the crying wants of his family, the proverb plainly tells us." (The letter then went into a review of the wretched state of the crops, which the noble Lord did not read to the House, and it then proceeded)—"The markets are rising, and must rise; and what will our population do, with their means destroyed—their crops of one sort nearly annihilated—and the other sorts beyond their reach? Our poor-rates are, or soon will be, double the average amounts; still affording no means of giving effectual relief to our working miners, and the vast numbers connected with them. And yet, gracious GOD! this is the time selected by our Ministers to put the seal of ruin to the interests of employers, and to deprive of every comfort those who would most willingly labour for the support of their now helpless families. You know I am not an alarmist. But, pray, my good friend, see some one who can have access to our rulers, and urge upon their consideration the awful consequences to which the sacrifice of one of our staple commodities at the shrine of most selfish domestic and foreign interests must inevitably lead. The moment is critical; and if the lives of our population, and, I fear I must add, the peace of the county, are to be preserved, their steps must be retraced, and that without delay."

After reading this most appalling—and, it is to be feared, too true—account of the situation of the western counties, the noble Lord concluded by observing, that the deplorable condition of the smelter, which had been so much insisted upon, was a fiction: "for it had been repeatedly shown, that the price of the ore purchased by him had fallen in a much greater degree than the price of the copper which he sold (hear, hear); inasmuch as, since 1842, whilst the price of the former had fallen from 84*l.* 12s. 5d. to 56*l.* 17s. 8d., a difference of 27*l.* 14s. 9d. per ton, the price of the latter had only fallen from 90*l.* 10s. to 79*l.* 10s., a difference of only 11*l.* per ton."

Mr. MUNTZ having taken upon himself to correct, in a spirit of contradiction, the figures of Lord GEORGE BENTINCK, by stating "that the reduction in the price of copper, since 1842, had been 19*l.*, and not 11*l.*, as the noble Lord had stated;"—it may be well to show how the question of reduction in the prices both of copper and its ores really stands, which is thus:

In 1842, the mean price of cake copper was				£90	10 0
1843	"	"		83	5 0
1844	"	"		85	5 0
1845	"	"		88	10 0
1846	"	"		90	15 0
1847, to the 11th February	£88 10 0				
" 11th March	93 0 0	} being an exact average of		96	10 0
" 31st Dec.	98 0 0				
1848, to the 1st February	98 0 0				
" 1st March	93 0 0	} being an exact average of		88	3 8
" 11th July	88 10 0				
" 5th Sept.	79 10 0				
The reduction in the price of copper, then, from 1842 to the present time has been, as Lord George Bentinck said, 11*l.* per ton.—That price having been, in the year 1842				£90	10 0
And from the 11th of July last				79	10 0
Being a difference of				£11	0 0
Or, 12·15 per cent.					
But the price has been, since 1842, at a much higher price than it was then—namely, from the 11th March, 1847, to the 1st Feb., 1848, it was				£98	0 0
From which deduct the price from the 11th July last of				79	10 0
And there is certainly a difference of				£18	10 0
Or, 18·87 per cent.					

This was an unfortunate position for the advocates of smelting distress to have taken up, as the price of copper, up to 17 days before Lord JOHN RUSSELL was made their mouth-piece, had been, for the preceding 11 months, higher than at any period since 1842, by 5*l.* per ton, and higher than the average price from 1842 to the 11th March, 1847 (when the price was so fixed at the extreme rate of 98*l.*), by 10*l.* per ton!

Now, let us take the prices of ores for the same period of time—say, from 1842 to Midsummer last. The average price for the quantity of ore equivalent to one ton of copper was—

In 1842, for Swansea sales				£86	3 7
And for Cornish sales				83	3 0
Being an exact average of				£84	12 5

This was the value named by Lord GEORGE BENTINCK. But, as we are now speaking of the effect of these measures upon British mining interests, the comparison shall be made with the value of ores as sold in Cornwall. Now,

In 1842, the average price of Cornish ores for year ending Midsummer was				£83	3 0
1843	ditto	ditto	ditto	73	12 7
1844	ditto	ditto	ditto	72	12 3
1845	ditto	ditto	ditto	68	5 0
1846	ditto	ditto	ditto	71	6 4
1847	ditto	ditto	ditto	69	8 6
1848	ditto	ditto	ditto	64	4 10
For the *quarter* ending 25th March, 1848				64	8 1
For the *quarter* ending 24th June, 1848				56	17 8
The average price of 5 years, 1842 to 1846, was			£73	15	10
Ditto 15 years, 1833 to 1847, was			75	11	7

It follows, then, that the average price of ores, equivalent to one ton of copper, for the quarter ending the 24th June, 1848, being 56*l.* 17s. 8d. (the lowest price recorded in the annals of the copper trade) was less by—

£ 7	10	5	—or 11 6-10ths per cent., than the quarter ending 25th March, 1848.
7	7	2	—or 11 4-10ths per cent., than the year ending 30th June, 1843.
12	10	10	—or 18 per cent., than the year ending 30th June, 1847.
25	5	4	—or 31½ per cent., than the year ending 30th June, 1843.
16	8	2	—or 23 9-10ths per cent., than the average of 5 years, 1842 to 1846.
18	13	11	—or 24 7-10ths per cent., than the average of 15 years, 1833 to 1847.
11	7	4	—or 16 6-10ths per cent., than the lowest average of any one of these 15 years.

Thus, it appears that, in whatever way the comparison is made, of the last quarter with any period of the last 15 years, the minimum falling off in the price of ores is 11 4-10ths per cent., and the maximum diminution is 31½ per cent., the decrease, by comparison with the last 15 years' average, being 24 7-10ths, or, in round numbers, 25 per cent. Let this be compared with any reduction in the smelters' price for cake copper, and then let it be decided, who are the real sufferers—the smelters or the miners?

Is the hon. Member for Birmingham satisfied with the foregoing figures? If not, let him attempt the disproof of their correctness, and the writer will be quite prepared to enter the lists with him.

Mr. LACY, quoting the CHANCELLOR's remarks upon the advantage of mixing the rich ores of Chili and Cuba, with the poor ores of Cornwall, "begged to ask, if the proposed scale of duties was agreed to, which would stop a great number of the Cornish mines, where would they get the Cornish copper ore, to mix with the foreign?" This question is easier asked than answered, or than it probably may be a few years hence.

Mr. WYLD then asked the CHANCELLOR of the EXCHEQUER, as they would have, in future, to compete with foreign countries on terms of disadvantage, "whether he would permit them to obtain their timber and tallow without payment of duty?"

The CHANCELLOR of the EXCHEQUER said that "timber was cheap enough, as there was only a shilling duty on colonial timber."

Mr. WYLD observed, that "the miners found it necessary, from circumstances, to use chiefly Norway timber."

The CHANCELLOR of the EXCHEQUER: "Then let them use the other."

It is due to Mr. WYLD to state, that in the general observations which he addressed to the House at an earlier period of the debate, he urged upon their attention the hardship to the miner of his present position with respect to tallow, especially the former; but as an attempt to follow the hon. gentleman in his remarks upon the subject, would not convey so clear an idea of the state of the case as a short statement in figures, it is here given in that shape:—

The consumption of timber in the mines, in the year 1846, was about 26,000 loads, paying a duty at that time of 1*l.* 6s. 3d. per load, or	£34,912	0	0
In 1847, the consumption was about 24,000 loads, upon which the duty was 1*l.* 6s. 3d. to the 5th April, and 1*l.* 1s. for the remainder of the year; making an average of 1*l.* 2s. 4d. per load, or	26,800	0	0
Until the year 1842, all timber used in mines was entitled to a drawback of about 82 per cent. of the whole amount, on satisfactory proof of its having been so used. This drawback was at that time abolished.			
The amount of duty upon the consumption of 1846 and 1847 was	£61,712	0	0
Or an average per annum of	£30,856	0	0
Of 82 per cent. of which, or per annum, the former drawback, the miner was deprived by the law of 1842.	£25,302	0	0
The consumption of 1848 is computed at 22,500 loads, the duty on which, now 15s. 9d. per load, is	£17,718	0	0
of which 82 per cent. is lost to the miner, under the altered law. It amounts, in fact, to a tax upon him to that extent.			

Since the drawback upon timber used by the miner was abolished, the duty has been remitted upon the timber used in connection with the Herring Fishery; and, whilst it is admitted that our fisheries merit every encouragement that can be afforded them, as a great national benefit, it is difficult to conceive why a privilege should be granted to the fisherman, upon the material from which his cask is made, and for which, directly or indirectly, he ordinarily receives payment, whilst it has been withdrawn from the miner, whose operations are as beneficial to the State as those of any other class in the country. And it must always be borne in mind, that the whole of the timber used in mines—so essential to the maintenance of the underground works in a secure state, and the preservation of the lives of those engaged therein—the whole of such timber is irrecoverably lost. And if copper ore is to be left unprotected, under the pretence of its being a raw material, why is the duty retained upon timber and tallow? the consumption of tallow and oil in the mines being to the amount of 30,000*l.* per annum; and, as in the case of timber, their value is entirely lost, since there is no direct return for their consumption.

These are objects of great moment to the miner; and especially so, when all his protection against foreign competition is removed, which would seem to be equivalent to a tax upon him, to the amount of the abolished duty.

After the abrupt answer of Sir C. WOOD to Mr. WYLD's enquiry upon these subjects of timber and tallow, the committee divided; there being, for the amendment, 19; against it, 43—majority 24, against Mr. HENLEY's amendment.

On the following day, Thursday, Aug. 31, the bill was reported.

On Friday, Sept. 1, the bill was read a third time and passed. On the motion that the bill be read a third time, the supporters of native industry, finding, from the packed state of the ministerial benches, that further discussion was useless, Lord G. BENTINCK contented himself with moving, as an amendment, that it be read a third time that day month. Division 38 to 25 against the amendment.

Thus ended the farce of Legislation upon this question in the House of Commons!

The Bill was sent to the House of Lords the same day. But as the debate and general proceedings in that House upon the measure, open the door to some important and serious considerations; and as this article has already reached an unreasonable length, the writer will again beg space—but a space of small extent, compared with that which he has already occupied—in order to conclude the subject.

[To be continued in next week's Journal.]

REDUCTION OF DUTIES ON COPPER AND LEAD.—The following duties are now payable on copper and lead, under the Act 11 and 12 Vic., cap. 127, which took effect on the 5th inst. Copper ore and regulus of copper, 1s. per ton; old copper, unwrought copper, rods or ingots, in plates and copper coin, at 2s. 6d. the ton. Lead, pig and sheet, per ton, 2s. 6d.

CONTRACT FOR WELSH COALS.—The Commissioners of the Admiralty will be ready to receive contracts on the 5th October, for delivery at Haulbowline 1500 tons of Welsh coals for steam-vessels; and on Thursday next, the 28th inst., for 250 tons of English tough cake copper, for the dockyard, at Chatham.

MINING IN FRANCE.—Mining operations, both in France and Belgium, still continue on a very limited scale, as the scarcity of money generally prevails throughout the mineral and metallic departments. The forgemasters only produce as much metal as they think they are likely to dispose of at a moderate profit—keeping no large stock on hand, being aware that, before long, both foreign iron, machinery, and coal, will be admitted at a very reduced duty.

MINING IN MEXICO.—By the last accounts from Mexico, *viâ* the United States, tranquillity had been established throughout that republic, mining was progressing, and the Government was not only restoring order and confidence, but giving the greatest encouragement to mining enterprise, and the laying down of railways, and the formation of roads in the metallurgic districts.

CONVEYANCE OF THE ROYAL MAILS TO INDIA, EGYPT, &c.—The commissioners for executing the office of Lord High Admiral, have given notice that, on Thursday, the 2d of November next, they will be prepared to receive tenders for the monthly conveyance of her Majesty's Calcutta and China mails, and dispatches between England and Alexandria, by way of Gibraltar and Malta, leaving Southampton on 20th of each month, and also for the monthly conveyance each way of her Majesty's mails and dispatches by steam, between Singapore and Sydney, New South Wales.

HARDWARES AND CUTLERY—DIMINUTION OF EXPORTS.—The declared value of hardwares and cutlery exported in the month ending August 5, 1847, was 234,305*l.*; and for the corresponding period in 1848, only 158,644*l.*—showing a decrease of 75,661*l.* The decrease in the value of the principal articles of British produce and manufactures, amounted to the large sum of 984,579*l.*, as compared with the same period last year. In woollen manufactures and woollen yarn, the decrease is 289,934*l.*; cotton manufactures and yarn, 372,475*l.*; silk manufactures, 58,671*l.*; in iron and steel, 34,572*l.* The decrease, however, is greater, in proportion, on hardwares and cutlery, than in any other commodities.

THE EXPORT COAL TRADE.—We have again to record the gratifying fact that the coal-exports continue to cut a respectable figure, and to contrast, consequently, most conspicuously with the exports generally of the kingdom. The coal-exports of the month ending August 5, 1848, amounted to 106,052*l.*; whereas, those of the corresponding month of 1847, only amounted to 84,577*l.*—showing an increase on the month of 21,475*l.* This increase of our staple trade, we repeat, is cheering, amidst the cries of distress which are to be heard on almost every side.—*Gateshead Observer.*

A SKILFUL AND COURAGEOUS COLLIER.—Thomas Burn, of Grange Pit, near Belmont, who, a month ago, hewed 42 corves in seven hours, beating a comrade by 10 corves, has since performed a more meritorious feat. A pit lad was wedged in by a fall of coal, and the deputy sent for Burn to "hew him out." "At the imminent risk of his own life," says the *Durham Chronicle*, "and having to lie on his side while he worked, he succeeded in accomplishing his object. The brave and generous fellow well deserves notice and reward for his gallantry and kind-heartedness. Those who are acquainted with colliery workings will best understand the danger of the exploit, and merit of its execution."

PROSPECTS OF BRITISH MINING AND METALLURGY.

Notwithstanding the seemingly threatening aspect of political affairs for the renewal of confidence, and speedy revival of trade, we cannot, upon mature reflection, but look to the immediate future with strong hope for the British manufacturer. The storm that is raging all around us—for Ireland has been drawn into the revolutionary vortex—is not solely of a destructive nature. It promises to regenerate and invigorate even more than it will overturn; and where its fury sweeps, with the might of a hurricane, many traces of accustomed and venerated human creations from the earth, it will be found that such have only succumbed from internal effeteness and decay. Amidst the shock which the organisation of industry and credit have received upon the continent, there is reason to hope that both will attain a very needful improvement and extension. The industrial and social condition of the greater part of Europe, must be understood before any such hope can be admitted as well founded; and we propose to offer our readers some details calculated to throw light upon a matter of such vast importance to our manufacturing interests.

A glance at the map will show that the revolutionary movement is at present most powerful in those lands which are in a state of transition from the agricultural to the manufacturing phases of industry. Prussia and the countries of the Zollverein, Austria and Northern Italy, France, and, we may add, Ireland, almost exhaust the list of such as have experienced troubles, arising out of purely political causes. In Poland and Hungary, the present dissentions spring from the antipathies of races, although these antipathies have, doubtless, been inflamed, if not engendered, by the manner in which the supremacy of one race over another was asserted. The Germans, whose policy, both in Austria and Prussia, is highly repressive of trade, could not expect to be popular in subjugated Poland and Hungary, where not merely wealth, but civilisation, is dependent upon commercial intercourse with foreign lands. In Germany, itself, manufacturing industry took its recent advance, not from an accumulation of capital, drawn from agricultural profits—for the savings out of which the owner was driven to seek new investments—no such thing; the want of good means of communication, the tolls on rivers, but, above all, the faulty distribution of agricultural labour and resources, prevented the resources of those countries, whose wealth consisted of abundant and rich soils, from being turned to proper account. It was chiefly as a shift on the part of needy speculators, who had no share of the land, or had lost what belonged to them, that manufactures were resorted to in many parts; while in others—as in Bohemia—the landed proprietors in despair at seeing their vast territorial possessions covered with a boorish, pauperised population, descended from the dais into the workshop, and under the inspiration of professors and tutors, started metal foundries and glass works, encouraged coal mining, and finally ended, where it would have been better to begin, with patronising railroads and steam navigation. In proof of what is here advanced (and which conveys no slur upon these patriotic nobles), we may appeal to the numerous iron, and other metallurgical and mechanical establishments, now carried on by, and under the firms of, Princes Coburg, Diedrichstein, Clary; Counts Bucquoy, Harrach, Salm; Baron Dalberg and others, in Bohemia, Austria, and Hungary. All these are members of old houses and landed proprietors, and are not to be classed with the new nobility of the Kübecks, Dobblhofs, Stammetz, Arnsteins, and Rothschilds, who owe their rank and titles to the talent and success of those who bear them, or of their immediate predecessors. In Silesia, similar efforts have been made by Count Schafgotsch and others. The King himself is a flax spinner at Erdmaunsdorf, a coal miner in the valley of the Oder, and at Saarbruck, in Rhenish-Prussia. Nearly all the other manufactories in Germany have been started with capital borrowed from Government, or from adventurous bankers, by needy, but sometimes talented, individuals. The foundation of the "Seehandlung," or Oversea Company of Berlin, ostensibly intended to promote direct colonial trade, but, soon after, turning the capital, with which it was endowed by Government, to the support of sinking manufacturing undertakings, rather proclaimed, than concealed, the weak foundation upon which these attempts rested. Without the aid afforded at times by this Government substitute, the list of mills and factories in Prussia would be a very short one. Excepting in Rhenish-Prussia, nearly all depend, more or less, upon the aid afforded to their originators from this questionable source. The fortunate amongst the speculators have turned the loans to good account. The less thrifty, or less skilful, failed, but often without serving as a warning to others, who, impelled by circumstances into the same course, constantly renewed the fruitless toil, and wasted time, talent, and money, in reconstructing a pile which the first shock laid level with those which had preceded it.

We must, in fairness, consider this origin of manufacturing in Germany, Italy, and France; and the same applies, with various modifications, to Holland and Belgium, as well as the difficulty of the task imposed upon those who undertook it—the honest misconception under which it was attempted, and the natural reluctance to acknowledge that success was impossible, before we sweepingly condemn the anxiety displayed in all these countries, to ensure Government patronage and protection for their exertions. The factories stand upon an artificial ground, and naturally look to artificial support to ensure their prosperity. This is the secret of the anti-commercial disposition of many of the German states—a disposition which, it is well known, is shared neither by the trading republics—Hamburg, Bremen, and Lubeck—nor by such agricultural states as Hanover, Oldenburg, or Mecklenburg. At Berlin, too, it has been satisfactorily ascertained, that trade is at least the most productive source of taxation. The trading and agricultural states have hitherto withstood all attempts to draw them within the pale of the Zollverein—the high import duties imposed by its tariff threatening the destruction of their present prosperity. No doubt a strong party prevails at Frankfort in favour of commercial restriction. It is chiefly composed of demagogic theorists, who are in no way interested in manufactures, but who hope, by favouring anti-commercial views, to obtain influence. This fact has not been put forward by any of the journals, who daily discuss foreign politics; but we can assure them, that it throws great light upon the opposition to Prussia manifested at Berlin, and upon the Danish war, which has quite as much for its object to overcome the Hans Towns and Holland, as to coerce the Danes.

We are bound to confess, after this hasty sketch of the position of the German manufacturers, that we do not expect from that quarter, any more than from France, a speedy recognition of what would be equally advantageous to these countries as to ourselves—an acknowledgment that traders and manufacturers find their way best without Government interference, which is seldom calculated to help, but must always embarrass them. Still, the establishment of a sound administration of justice, the removal of impediments to communication in the interior, and the overthrow of the cramping and paralysing system of official tyranny, which may reasonably be looked forward to as the real gain of central Europe, derived from their recent revolution, will not fail to act as a spur to industry, and as a legitimate encouragement to exertion. We anticipate no decrease of our usual trade with Germany, even if she adopts a more restrictive tariff than her present one, provided the internal condition of the federation be regenerated, freedom of locomotion allowed, and tolls on the rivers abolished.*

From two other states, situated at extreme points of Europe, and important, both from their agricultural resources and growing population, we are inclined to expect more than from Germany; but here, too, the improvement will spring rather from internal ameliorations than from any interference of Government in the course of trade. We allude to Russia and Spain. In both these states no internal code of industry prevents the population from turning the natural resources of the country to the best account. Trade is solely fettered by the tariff of customs duties, imposed by the Government. In Germany, on the contrary, and in the other countries which we have classed with it, the faulty arrangements in the distribution of labour are more inimical to trade than even the tariffs. Our space compels us to reserve the details which confirm this assumption (perhaps new to some of our readers) for a future occasion, and to proceed at once to point out other countries to which the changes now in progress, in the political arrangements of Europe, promise speedily to open free access, if the just hopes and expectations of the inhabitants are not cruelly disappointed. We allude to the countries situated on the Lower Danube, and on the Vistula. The kingdom of Hungary, as is well known, has, from time immemorial, been a constitutional state, of which, since the 16th century, the head of the House of Hapsburg has been the king. Properly speaking, Hungary has no other connection with Austria than that the Emperor of Austria is, at the same time, King of Hungary. But the great military force which that sovereign has hitherto commanded enabled him to cut off a strip of land belonging to Hungary, and touching the Adriatic Sea, in which Fiume, the only Hungarian harbour, is situated, and, withdrawing this territory from the advantages of the constitution, to govern it arbitrarily by martial law. In the whole of this strip, which is called the "Military Frontier," the Austrian tariff, with all its prohibitive clauses, is rigidly enforced, and the consequence is, that Hungary, with all its rich agricultural products, is cut off from the sea, and from trade. The enforcement of this unauthorised prohibition to carry on foreign trade is what has of late years alienated the affections of the Hungarians from the House of Hapsburg. It is known to such of our readers as follow the events now progressing in other countries, that the harbour we have named (Fiume) has, within this month, been captured by the insurgent Croats, whose first movement led them instinctively to secure this communication with the sea. The capture was made from the Austrian officials and custom-house guards, who then formed the sole garrison, the inhabitants making no resistance, and the whole event showing how much the desire to improve the means of trade predominates amongst the present dissensions, which some like to think purely political.

If Hungary succeeds in opening this outlet for foreign trade, she presents to our manufacturers a population equal in number to that of the United States, for Fiume is not only the key to 12,000,000 of inhabitants in Hungary and Transylvania, but to 5,000,000 or 6,000,000 of Turkish subjects in Bosnia and Servia. These countries lie above the falls which interfere with the trade in the Danube. The countries situated below those falls—Wallachia, Moldavia, and Bulgaria—are accessible from the Black Sea (with Russia's permission); and these, at least the two former, are also regenerating their internal condition.

A little attention devoted by England to the progress of these fine countries, and a little care bestowed upon remedying the mischief done by the treaties of commerce, which we have concluded with the Porte, would restore to western Europe a natural market, presenting 9,000,000 of consumers, out of a poor station for the corn trade, which is all that Galacz now presents. Nor does the state of Poland less demand attention. Cracow, an ancient city, with organised trading and banking traditions, within a short drive of Sandomir, so renowned for its wheat, is now situated at the head, or apex, of the system of railroads, which tends from the German Ocean to eastern Europe. From Cracow, all products can be forwarded with ease, in two or three days, to Hamburgh, and, when necessary, to the Rhine, by rail. To this circumstance, we look with great expectations in years of failure of our grain crops—for supplies, that hitherto we have had to wait the breaking up of the ice in the Baltic and Black Seas, may now be forwarded to us in the midst of winter. By the aid of this communication, we may hope that, in future, the fearful fluctuations in the price of corn, that have always produced so disastrous an effect upon our markets, and on our credit, may, in future, be avoided. Cracow is, moreover, especially well situated to prove a central mart for English manufactures, and thus offers the best channel for remitting what we may chance to owe for goods imported.

The Russian and Austrian portions of Poland contain 11,000,000 in habitants, whose tendencies are all agricultural. The first result of a reform in the Government of either of these districts, would be to throw off the yoke of the tariffs which now impoverish them, and to seek an extension of trade. It was to neutralise the aid which the free position of Cracow, as an independent state, enabled it to lend towards effecting this purpose, that made Austria so anxious to occupy that city. For the same reasons, we are deeply interested in its independence. In this manner we are induced to look to a more easy intercourse with the extensive, populous, and agricultural tracts lying between the Adriatic Sea and the Vistula in one direction, and between Fiume, on the Adriatic, and the mouth of the Danube, in another—that is to say, with a tract containing 32,000,000 of inhabitants, whose products we can use, and who are in want of innumerable objects that we can supply. Amongst these wants the formest are railroads, with all their accompanying requisites—waggons, machinery, &c. There is no available means for supplying this want from any other source than from England, if we hasten the moment of creating the demand. If we delay it, there will be an increased competition from the large establishments now preparing for work on the continent. We ought, therefore, to bestir ourselves, and may rest assured, that the best mode of counteracting anti-commercial tendencies in Germany, is to open a prospect of competition elsewhere.

[*To be continued in next week's Mining Journal.*]

* Since these remarks were written, the view here taken of our prospects with Germany has received a curious confirmation, in the publication of the new tariff of the Zollverein. The duties on silk wares are raised 100 per cent., woollen yarn is charged 25 per cent. additional, and woollen prints 20 per cent. additional.

THE PNEUMATIC PILE-DRIVER.—In the *Mining Journal* of July 8 last we described a pile-engine, worked on the principle of atmospheric pressure, which was successfully in operation at the coffer-dam for the new wharf, now constructing at Iron-gate, St. Katharine's. Messrs. Clarke and Varley, the patentees, have since much simplified and improved the machine, and its superiority over the old method is now clearly manifest. It gives a succession of short, heavy blows—the force of every blow being equal, as the rammer is always the same distance from the head of the pile, which is uninjured, and the rebound of the ram is avoided. The wharf above-mentioned is a situation to test its merits severely; in some places the ground is so hard, that it is scarcely possible to drive a pile by the ordinary method; yet the machine drives them with great rapidity, and works a full hour after the hand-engines are obliged to stop, from the rise of the tide. Among the testimonials of its complete success which the proprietors have received, is one from Mr. William Gravatt, the civil engineer, of Parliament-street, in which he says—"I am much pleased with your pile-machine. On the score of its simplicity, cheapness, and the ease with which it can be fixed, worked, and shifted, there is nothing to be desired. It may be objected, that there is some loss by using the atmosphere as the means of power, instead of the direct action of steam; but, in its practical application, I doubt if that is anything like the disadvantages arising from condensation in the connecting-pipes and cylinder, especially with high-pressure steam, with the machine at any moderate distance from the boiler; whilst, in facility of working, the advantages are entirely on your side." Other engineers, and parties who have used it, or seen it in operation, give similar testimony; and Mr. Harrison, the contractor for the works at Iron-gate Wharf, is employing it to his entire satisfaction. We have expressed our opinion of its working in the notice above referred to, and can only repeat, that from its portability, rapidity of action, and economy, we think it must eventually supersede the hand-engine in all works of any extent or importance.

ARTIFICIAL TEETH.—We have lately inspected a case of artificial teeth, constructed of an entirely new material, the invention of Mr. Moggridge, of Old Burlington-street, who formerly secured a patent for applying the pneumatic principle for fixing artificial palates. These new teeth he has also patented; they consist of a description of enamel, which, in its first state, can be moulded to any form—and thus teeth, of all shapes and sizes, are produced, presenting in colour and finish a perfect resemblance to the natural tooth. The shades of colour can be varied, from the pearl of the maiden in her teens, to the browner tint of the downfall of life; and thus any set of teeth may be matched, and the intruder remain unnoticed. When perfectly set after manufacture, they are hard as adamant, with a polish equal to the natural tooth, are proof against the action of acids, and are even uninjured by the heat of a common fire. This discovery must prove of interesting importance to persons requiring artificial teeth; for it is a disgusting fact, that thousands of teeth have lately been imported into London from Paris, taken from the heads of the victims of the outbreak in June last, for the use of the dentists here.

IMPROVEMENTS IN BRIDGE-BUILDING.—A fine new wooden bridge has recently been erected by the Cambuslang-road trustees, across the river near Dalmarnock, to supply the place of the old one, which is now 30 years old, and very much decayed. The new bridge was commenced only five months ago, and was built by Mr. John Murray, of Coatbridge, to whom the workmanship does much credit, from a design by Mr. Robson, C.E., who, it is said, has introduced several improvements in the mode of construction. The whole length of the bridge is 355 ft., and the width within the side-rails is 28 ft. There is a footpath on each side, covered with asphalte pavement, and the roadway is composed of a mixture of asphalte and whinstone metal, broken, 7 in. deep, and laid on the top of the planking, which had been previously well caulked with oakum, and coated with pitch and sand, for the purpose of making it water-tight.

SOUTH-EASTERN RAILWAY.—The works at London-bridge for enlarging the station and widening the Greenwich Railway viaduct, suspended during the monetary panic of 1847, were resumed on Thursday. The bridge to cross Bermondsey-street is rapidly progressing. The Gravesend branch is also in a very forward state. It is expected to be opened for public traffic early in the spring.

We understand that the miners of the Lower Ward of Lanarkshire, who were last week on strike for a slight advance of wages (6d. per day), have obtained their demand, and are all again at work, with the exception of the colliories connected with two establishments in the vicinity of Glasgow.—*Glasgow Chron.*

THE GUTTA PERCHA COMPANY.

We have, during the week, availed ourselves of the opportunity of a visit to these interesting and extensive works, and were certainly most agreeably surprised at their magnitude, and the various beautiful operations upon this, until lately unknown in Europe, and singular substance, under manipulation. On its introduction to the Society of Arts, by Dr. Montgomery, in 1843, we were the first among our contemporaries to notice the circumstance, and the Doctor was presented by Prince Albert with the Gold Isis medal in the same year. On that occasion the substance appeared a novel and a peculiar one, and, from many of its singular properties then known, it was evident that it would become useful in the arts; but little were we, or the public, prepared for the extraordinary strides made in its application to articles of utility and ornament, which this establishment evidences has taken place in the short space of five years. The premises cover an extensive area of ground, and are approached by a large open court, or yard, having offices for various purposes on the right and left; the main building in front contains the machinery, manufactory, store-rooms, show-rooms, counting-house, &c.

The machinery consists of three powerful steam-engines, employed for turning the lathes, rolling-mills, and kneading apparatus, working cutting-machines, and various other mechanical operations to which it can be applied, steam chests, for keeping the gutta percha in a pliable state when under the hands of the workman, hydraulic presses for moulding the various designs, and a variety of others required by the infinite uses to which the material is now being applied. In going through the show-rooms, the mind is struck, by the numerous evidences afforded, with a strong conviction of the persevering energies and ingenuity of man, in thus, in so short a period, converting an unknown and useless-looking substance into a material now brought into daily use in the necessitous and luxurious arts of life; here we observe splendid looking-glass and picture-frames, finished in the most elaborately carved manner, and brought out with a sharpness and depth of undercut, which the chisel could hardly accomplish; brackets and ornaments in filagree, of all shapes and designs, naturally grained, rendering needless the pencil of the artist to produce perfect imitations of the most beautifully marked wood. On the other hand, we have necessaries of daily use—shoe-soles and heels, flower-pots, wash-hand basins, belts, harness, inkstands, book covers, tubing of all sizes, bougies, catheters, stethescopes, and other surgical instruments, whips, thongs, balls for tennis, golf, or cricket, waterproof goloshes and slippers, ornamental mouldings for architectural purposes, fruit-dishes, fire buckets, drinking cups, vases, and various other useful articles, too numerous for us to detail.

The company are also prepared to undertake contracts for covering wires for electric telegraphs, each wire being perfectly insulated in a non-conducting coating of gutta percha, impervious to moisture or atmospheric influence. Any number of wires may be encased in one band, which will be found extremely flexible, and the best article to be depended upon for conveying electric communication under rivers, harbours, docks, &c.—a desideratum highly valuable to Government officers, railway companies, and others. Laid underground it is equally efficient, and, in any situation, is more durable, economical, and doubtless, less liable to injury than any substance hitherto used.

Among the infinite variety of articles of taste and elegance with which the rooms are studded, we particularly noticed a desert service, of the vine-leaf pattern, others in imitation of old knotted oak, which were chastely elegant; while smaller articles, as dishes, pen-trays, busts, bas relieves, and other subjects, in great profusion, made up the collection. One most useful, and, we may say, humane purpose to which the material is applied, is the manufacture of washing basins, and other chamber utensils, for the use of lunatic asylums, and by the use of which the unhappy inmates cannot injure each other, as is too often the case with earthenware, or metal.

A few other specimens, and we must reluctantly close—we allude to some gorgeous panelling, in imitation of ancient carved oak, and which cannot, by the appearance alone, be distinguished from anything else than what it is intended to represent—the designs being brought out with a finish equal to the original, and by which application the finest works of our ancient carvers, so highly prized, may be multiplied to any extent. Gutta Percha is also spun into thread, wove into cloth, rolled into sheets, to supersede gold beater's skin and oil skin, is made into card cases, cigar cases, snuff and tobacco boxes, and hundreds of other similar articles, and appears to us to be capable of application to almost every article of domestic and ornamental use, where metal is not absolutely requisite. One of its greatest advantages is, it cannot break or be injured by a fall.

WHITWORTH'S STREET-SWEEPING MACHINE.

For information, and to call the attention of various parochial authorities to the advantages of the street-sweeping machine, an experiment was tried on Tuesday in the Strand, in order to test its powers. Three of the sweeping carts were set to work; the space given was from the beginning of the Strand, at Charing-cross, to Cecil-street, taking an area of 9520 square yards, or rather above an acre. The quantity of mud removed was 5½ loads, or about 6 tons; the sweeping took, deducting the time for unloading, 18 minutes. By the old system of broom-sweeping, it would require five men half-a-day to have performed the same work, and subjected the passers-by to the annoyance of receiving the splashes of the mud as it was raised in the cart.

The machine of Mr. Whitworth is no novelty—having been now in use some few years, and might have been noticed by most of our readers who are in the habit of passing from Charing-cross to Regent-street, and also about Millbank. The reason that it is not generally adopted, has been the fear of the parochial authorities asking what work can they employ their paupers on, if the machine is brought into general use; but without wishing to dwell too long upon the argument, of proving the superiority of machinery over hand labour, not only in this case, but in every invention brought under our notice, we may quote from a speech, made by Mr. E. Chadwick, at a meeting of civil engineers, relative to this subject. He said that, on the introduction of the sweeping machine at Manchester, it occasioned the discharge of nearly all the scavengers previously employed; being an observer of such displacements, Mr. Chadwick had instituted an inquiry as to what had become of the men displaced, and had learned that about 8 per cent. of them had died; considering the class (many of them being old and feeble), this was not a mortality beyond the average; omitting these, all but 6 per cent. of the displaced labourers had found other, and, on the whole, better work. In this case, as in others, the absorption of the labour displaced by machinery was in miscellaneous employments, which the labourers found out for themselves, and for which, under the stimulus of necessity, they qualified themselves—employments which would not have been pointed out for them beforehand, and for which they would not have imagined themselves capable. Under the pressure of the change, some had become drivers of the machine, some stokers for steam-engineers, two had entered the police, and none, so far as could be ascertained, fell below their former position, which, indeed, was scarcely possible. These facts speak for themselves, and should not be lost sight of, where the consideration of employing the poor should be a paramount duty.

FOREST OF DEAN.—We gave, in our Number of the 2d instant, an account of an arbitration for compensation for land and damages, claimed by Mr. Mathias, of Lamprey Castle, Pembrokeshire, from the South Wales Railway Company, for constructing their railway on the shore of the River Severn, in Gloucestershire, so as to almost cut off the communication between that river and a railway, which is partly made into the Forest of Dean, and a proposed dock for shipping coal, stone, &c. The award has been lately given, and is for 4000*l.*; and half the actual expenses incurred by the plaintiff, in the costs of the arbitration, to be paid by the railway company to Mr. Mathias.

RAILWAY IMPROVEMENT—SAFETY SIGNALS.—In the Number of the *Mining Journal* of the 9th inst., we noticed that a site had been obtained for the exhibition of two large models, showing the working capabilities of Messrs. Cunningham and Carter's pneumatic railway. Some little delay has necessarily taken place in preparing for fixing the models; but we are now given to understand, that they will be in operation in a fortnight at the utmost. In the patent taken out by these gentlemen, they have, we are informed, also specified for a self-acting railway signal, to give notice to every approaching train the exact distance the preceding one is in advance—and thus enable the engine-driver to regulate his speed accordingly, and prevent accidents. They are to be placed at certain distances on the line, and are worked on by a mechanical arrangement, acted on by each locomotive engine in its passage, when the signal is immediately displayed by night or day, for directions to the next train. We shall be enabled, in our next, to give a full description of this interesting and useful railway appendage, illustrated with a diagram.

Original Correspondence.

COPPER SMELTING.

SIR,—In your last few Numbers I have observed a great deal has been written about copper smelting, copper sheathing—in fact, of all things pertaining to that trade; and it seems that, through your columns, the smelting, which has hitherto been a close profession, should now have all its mysteries laid open, and secrets made public. I have no objection to this; my motto is, "live and learn;" and I have always thought that we should, however humble our abilities, or limited our capacities, as far as lies in our power, communicate the little knowledge we possess to each other, as no man is so well educated but that he may glean some useful information from his less fortunate neighbour. Some few years since I was employed abroad, to erect reverberatory furnaces, on the Swansea principle, for a foreign company, who were about to smelt their own ores, in preference to sending them to England. As, previous to my quitting England, I had no accurate knowledge of the cost of building a reverberatory furnace, nor the quantity of materials it would consume, as the bricklayers' used them, I booked every article, and having a copy by me, perhaps, at this present time, when so much interest is excited on the question, it may be worth insertion in your paper. The stack of the furnace was single, 40 feet high, and the furnaces were 13 ft. by 8. The following are the details:—

12000	common bricks—at 30s. per mille	£18	0 0
12	barrels of lime—at 4s.	2	8 0
5000	Newcastle bricks—at 3l. 10s. per mille	17	10 0
1300	Dynas ditto—at 4l. 10s. per ditto	5	17 0
2000	Stourbridge ditto—at 8l.	16	0 0
1½	ton cement clay—at 1l. 17s.	2	15 6
2	tons Dynas ditto—at 15s.	1	10 0
12	brown Flintshire bearers—at 10d.	0	10 0
2	Stourbridge ditto—at 1s. 1d.	0	2 2
6	slabs—at 7d.	0	3 6
23	cast-iron studs, 50 cwts.—at 7s. 6d.	18	15 0
2	wrought-iron ditto, 2½ sq., 3 cwts.—at 16s.	2	8 0
3	sleepers, cast-iron, 3 sq., 5 cwts.—at 7s. 6d.	1	17 6
	Hopper and frame, round iron for cramps, square ¾-iron for stack rocks, flat 1×14 for stack cramps, fire bars and wedges, about 1 ton —at 10l. 10s.	10	10 0
	Fore and concave and skimming plates	7	0 0
	Contingencies	2	0 0
	Making a total of	£107	6 8

To this must be added, about 14*l.* for the masons' labour, and 2*l.* for that of the smiths', which, added to the cost of the furnace, 107*l.* 6s. 8d., will make a total cost of 123*l.* 6s. 8d. The prices given are those of the period in which I was engaged in the construction of the furnaces, and, of course, at different times, have varied very considerably; any one, however, will be able from them to calculate what the present outlay would amount to. By building two furnaces, with a double stack to serve both, and using clay in the sides, instead of bricks, a less consumption of materials would take place, which would necessarily be followed by a commensurate reduction in the expenditure, thereby enabling the contractor to construct his furnaces on a more economical principle than above detailed. Should any further information be required on this subject, I shall be happy at all times, as far as lies in my humble power, to endeavour to comply with your request, or that of any of your numerous readers. A PRACTICAL MAN.

Liverpool, Sept. 10.

THE COPPER TRADE—SMELTER AND MINER.

SIR,—I was much gratified to observe, that the few remarks I made in last week's Journal had awakened the attention of one of the mining community; and I trust the interest attached to this important question, having now been mooted, will not be suffered to rest until some organic change takes place in the relations between smelter and miner. I believe at scarcely any period has the mining interest been so depressed as at the present time; and the evil has now become so overpowering, that unless some steps be taken to check it, thousands of our fellow-countrymen will be deprived of employment, leaving an industrious body, with their families, the choice of emigration, or the union; and a ruin, the consequences of which it is impossible to foresee, will follow; it will not alone fall on the unfortunate labourer, but adventurers, merchants, and the whole prosperity of the counties of Cornwall and Devonshire, will be sensibly affected by it. This, possibly, to the smelters, who have just obtained another bonus in the shape of the Copper and Lead Duties' Bill (so ingloriously smuggled through the House the last days of the long-winded session, now closed, which allows the slave labour of Cuba to compete with the free of England), and who can yet obtain a sufficient supply of foreign ores at their own prices, may be an object of comparative indifference; but it would be well for them to pause, and consider the position in which they at present stand. For a long period, and yet a while longer, they may be enabled to carry on their trade in the monopolising way they have hitherto done. Smelting is now no secret; improvements are daily taking place, which have a practical application; foreigners are becoming as wise as ourselves; smelting-works are being erected in several parts of the world; and if the foreign mining companies do not erect establishments themselves, they will carry their ores to where they can obtain them cheapest smelted. The works established last year in Hamburgh, which send vessels to South America in ballast to purchase ores, pay 18s. a ton for their coals, and obtain all their materials from England, although on a small scale, are a proof of the profits of this lucrative trade. There is no doubt, that they have experienced a depression from the late disturbed and unsettled state of Europe, as well as other trades; but I conscientiously believe, that while nearly all other callings, within the last six months, have been working to a loss, they have made a handsome profit, though somewhat below the enormous gains they have been accustomed to pocket. Should the projected British Copper Smelting Company be formed, I have no doubt that this will do much to remedy the present evil. Some of the mining interest will, probably, be joined with them, and they may be content with a fair profit, without seizing the lion's share, as is at present practised. To effect, however, any radical change, it would require a firm union, and a strong co-operation, among the miners themselves. I am confident, that if any of the larger mines were to erect smelting-works on their properties, on a sufficient scale to smelt their own produce, they would soon be enabled to become purchasers of ores from the smaller mines, which had not sufficient prospects of permanency to warrant the erection of works, and be enabled to give them a remunerating price for their produce, or smelting it at a certain price, returning the copper; while they, on the other hand, would be the gainers, by the amount saved in carriage and freight.

The great difficulty which is supposed to have prevented the smelting of the hard Cornish ores alone, has been the effect they have on the bottoms, the necessity of providing fluxes for them, or the purchase of rich foreign ores, to counteract their destructive tendency. It is well known, that the bottoms used in the ore furnaces at Swansea are composed of sand; this, although good in the ulterior processes, will not always bear the test of a practical application in the first operation. I have seen bottoms, composed of different sorts of fire-clay, which have resisted the effects of ores containing above 70 per cent. of magnetic iron pyrites; these, though more expensive, in the first instance, were less costly in the end, as they have lasted from two to three months without perceptibly wearing down. Nearly every charge tapped has been clean, and, when broken up, scarcely any regulus has been absorbed in them. They require, however, great care in their treatment, especially the first two or three charges, after which they can be worked on as freely as any other bottom. Some small profits might be made from the sale of slag bricks, which, as well known, are of a most durable and lasting quality, and not liable to injury from exposure to the weather. The refuse from the coals, though scarcely available in Swansea, where fuel is so cheap, would be of some advantage in the mining districts of Cornwall. It has been calculated, that the cost of the reduction of a ton of copper, from 8 per cent. ore at Swansea, is about from 17*l.* to 18*l.* per ton. In ores of a less per centage the cost would be cheaper, as the fuel required in the ulterior processes—some of which occupy 24 hours—would be less, from the smaller produce of the metal; much of the ore, at present of too low a per centage to bear the cost of carriage and shipping charges, could be smelted on the spot. Some quantities of sand would be required, and it would be requisite to know the cost of that, and the transport of fire-bricks, clay, and iron, required to the site fixed on by the mining adventurers. It must, likewise, be remembered, that the 21 cwts., now obtained by the smelter, to the ton, would go to the credit of the miner, instead of, as at present, being considered a perquisite of the former party; while the miner is obliged to pay carriage and freight at the rate of 20 per cent.—thereby absolutely conveying to Swansea, out of every 105 tons, 5 tons free of all charges, to benefit the smelter; while he receives payment from him for 100 tons—thus making him a present of nearly 5 per cent. of the produce of the mine. No wonder that they are so enormously rich, when, without any risk, they obtain such a clear gain from the whole production of the mining interest.

That the outlay required to erect smelting-works for a mine, producing (say) 3000 tons annually, would not be great, your correspondent, the "Cornish Miner," is perfectly correct; and I agree with him, that the great consideration would be the power to sustain the mine costs while advancing those of smelting, previous to receiving payment for the copper. In no small establishment would it be advisable to light the refinery before, at least, 60 to 70 tons of black copper were on hands; as a consequence of this, the copper would, in general, be only realised quarterly. It would require, in the first instance, a small capital to be subscribed, in order to meet the current expenses; and if, instead of too early declaring dividends, these were placed to the stock, in a short period all dangers and difficulties would be overcome; while the immense advantage that would accrue from smelting their own produce, in a little time, would repay them, and convince them that they had acted well and wisely for their own interests; they would reap the benefit of their exertions, instead of, as at present, in many instances, raising ores at a ruinous loss, to benefit and aggrandise five or six individuals, who fix their own sliding-scale, although, as monopolists, they adopt the free-trade axiom, of "buying in the cheapest market (making it so themselves), and selling in the dearest."

I have endeavonred thus briefly to point out a few of the advantages which would result to the miner if he smelted his own ores; but I think no further conviction of this fact is necessary, when he sees foreign mining establishments are enabled to purchase their coals, materials, &c., in England, paying freight duties on them on their arrival at the works, and yet make fair profits on ores averaging from 3 to 5 per cent.; and it is a strange paradox, that in a rich country like England, with a mining interest of such magnitude, on which the prosperity of so many individuals depends, that the attempt has not been tried previously. Let us hope that there is "a good time coming" for the smelter as well as the miner; no one, I believe, will deny, but that they are mutually necessary to each other, nor could the one exist without the aid of the other. Let the smelter have his just profits, and no more, and the miner his, and no less. To oppose the present system single-handed, with its enormous capital, would be almost an act of madness. Let the mining interest, from the adventurer to the labourer, be up and stirring, each working in his own sphere, zealously co-operating with his neighbour, throwing self aside, and considering the general good as his own. A firm union once formed, the barriers of monopoly will be forced to surrender; but to achieve this object, it will be necessary for all concerned to give "a long pull, a strong pull, and a strong pull altogether."—DELTA: *Sept.* 12.

COPPER SHEATHING—NEW SMELTING COMPANY.

SIR,—A very interesting discussion has been carried on for some time, through the medium of your useful Journal, on the subject of the properties and quality of copper for sheathing ships' bottoms. I take the liberty of suggesting a cause which appears to me likely to influence the quality of copper, and that is, the properties of the coal used for smelting and working the metal. Blacksmiths, in general, are well aware of the effects of different sorts of coal upon iron. There can be little doubt that it is the difference of the coal in Staffordshire and South Wales which causes the difference in the quality of bar-iron manufactured in those two localities. Is it, therefore, not likely that the deficiency of gas, or hydrogen, in the coal about Swansea, Neath, and Llanelly, is one main cause of the deterioration of sheet copper, of which some of your correspondents have been taking notice? It came into my head, some short time ago, that a combination of small anthracite coal, with rich bituminous, would form a very valuable and powerful coke for foundry purposes, tin-mills, locomotive engines, &c. With this view I set about researches into the different descriptions of coal in this part of South Wales. Really pure rich bituminous coal is scarce about the localities just referred to. Decidedly the best which I have met with is at Pembrey—a port at the entrance of the Burry River, in Carmarthen Bay. I notice, in the *Mining Journal*, that a new copper smelting company is in contemplation; for such an establishment the best site, in my opinion, would be in the county of Durham, were it not that a long, tedious, and circuitous sea voyage intervenes between that point and all the chief mining districts. On the coast of South Wales a better situation for a smelting establishment than Pembrey cannot be found; there is a canal to the port, leading down from the head of the Gwendraeth Valley, where some of the purest anthracite coal is in abundance. Close to the port a colliery is at work, yielding, I have no besitation in saying, the richest bituminous coal in South Wales. At the new harbour of Pembrey, or Burry Port as it is called, there is a capacious floating dock, capable of receiving the largest merchant vessels.

Cwmamman, Sept. 15. T. H. LEIGHTON.

COMPANY OF COPPER MINERS IN ENGLAND.

SIR,—The break up of the Company of Copper Miners in England induces me to offer a few remarks on the impolicy of a company departing from the intention of their association. If the name of this company meant anything, it meant an association for the purpose of mining. The peculiar characteristic of mining is, that it affords an investment to seek profits, which are exceedingly variable, but which, on the average, are greater than could be acquired by other modes of investment. Against the strength of associated capital, which overcomes difficulties and risks in mining that would exhaust a private purse, private individuals can rarely compete; but, when public companies enter into industrial and manufacturing operations, as the Company of Copper Miners has done, it becomes so overloaded with incompetent and useless placemen, and with expenses added to want of trading and manufacturing skill (which private individuals escape), as to fail in the race of competition. Let me offer a word of advice to such of your readers as are not content with the interest of the public funds, or the interest of mortgages, with risk of title. It is becoming apparent that railways from competition will, for the most part, be profitless. Let individuals, therefore, who wish to speculate for 30 per cent., invest such capital, as they can spare, in British copper and lead mines, into the merits of which they have opportunities of inquiring, and avoiding joint-stock banks, leave Australian and other foreign mines to those who are fools enough to suppose that the natives will not take the oysters, and give us the shells.—ARGENT: *Gloucester, Sept.* 19.

COPPER SHEATHING.

SIR,—I should be happy if Mr. Prideaux could, by any means, inform me from whence he obtained his analysis of the Norwegian copper, which he so obligingly favoured us with in your last week's Journal. During the whole course of my practice with the Norwegian ores, I never discovered any traces of tin with them; nor am I aware it has ever been found in that country. Tin, I believe, almost exclusively belongs to rocks of the primary formation—as granite, gneiss, and mica slate. The copper deposits in Norway are all in quartz, or calcareous spar, of the secondary formation. The Norwegian gahr kobber, which is exported from Drontheim to Amsterdam, seldom has a higher per centage than 92 to 94—the principal extraneous matter remaining in it being iron. Smelting operations, however carefully conducted, must invariably entail, from various causes, some loss of the metal; and, if the copper was taken by the humid assay, where every particle is obtained, the process would show a deficit: for all scientific or theoretical experiments, no one can doubt the superiority of the wet way, by precipitating the copper with iron; but I am of opinion that, for practical purposes, the assay by fire commands a preference. The German smelters have a great opinion that, allowing both the ore and the regulus to cool after the repeated calcinations, tends much to improve the quality of the metal; they assert that the oxidation of the sulphur, after the ore and regulus has been burnt, is still proceeding, even though the mass be stacked; and what is lost in time is amply recompensed by the saving of fuel, wear and tear of the furnaces, and the superior quality and easy management of the metal under the subsequent processes. That very pure copper is not required for sheathing ships' bottoms, I think the different letters that have appeared on this subject will sufficiently prove: the purity of the copper, no doubt, enhances its value, and increases its malleability and ductility; and for boilers, machinery, &c., where it is subject to expansion and contraction, it will be found the most useful.

The point which, I believe, we are all striving to arrive at here, is what species of copper, or copper alloyed, will best resist the action of the deleterious subjects, and chemical agents, in the several seas—from what cause the corrosion arrives, and how it is to be prevented; it has been found, that the use of electrical means, as employed in the case of Sir Humphrey Davy's protectors, has signally failed, owing to its fouling the bottoms, and making the ships dull sailers. I think some light could be thrown on this interesting subject, if some of your chemical correspondents would make analyses of the different waters; and on discovering the salts, acids &c., they contain, probably some alloy might be found to protect the sheathing from material deterioration, if it did not wholly remedy the evil. Should Mr. Prideaux be in possession of such information, he will, I am sure, much oblige your readers by communicating it to them through your valuable columns.

In another part of the Journal, I observe "A Roaster Man" accuses Mr. Mushet of blaming the smelters for the waste of iron and sulphur, which could be extracted from the different copper ores, and laughs in his sleeve at the enormous profits which would arise from this process. He seems to think that it is the duty of the miner to separate the several substances, and to see that nothing goes to waste; although the miner certainly should look after his own interests better than he appears to do at present, yet he must be aware that, under the system now practised, the miner is completely at the mercy of the smelter.

Though the Swansea smelting-works are the largest in the world, and the best practically conducted, he cannot but acknowledge our smelters are miserably deficient in chemical knowledge, and must remain so until they obtain some theoretical education. Had he attentively read your columns, he would find that the extraction of the sulphur from the copper, and its subsequent useful application, has already awakened the attention of many scientific metallurgists both here and on the continent; I need only allude to a notice of an experiment to save the sulphur and iron, by Mr. Sinding, of Norway, which appeared in your Journal of the 20th of May last. For many years the process of the separation of different metals has been carried on in the Hartz Mountains, at Rammelsberg, near Goslar; in that district copper pyrites is found with galena, blende, iron pyrites, and minute portions of gold and silver: all these metals are separated in the smelting-works there, with very little loss, and no metal of any value is sacrificed to obtain the other. One fact I do not think the "Roaster Man" will endeavour to controvert—while every metallurgical trade has been making rapid progress in improvements, that of copper has been almost at a stand-still.—GERMANICUS: *Sept.* 20.

PURE IRON.

SIR,—Mr. Mitchell's letter, in last week's Journal, does not appear to me to be conclusive—an extract from Mr. Graham's *Elements of Chemistry* merely removes the ground of argument; for, although I by no means would call in question Mr. Mitchell's talent and *experience*, I must still doubt the existence of his *spongy iron*. The protoxide of iron, precipitated from the proto-sulphate by ammonia, will, after drying, at a temperature of about 600° Fahrenheit's thermometer, excluded from the influence of the atmosphere, take fire spontaneously, after a short exposure to the air; and the spongy iron, alluded to by Mr. Mitchell, appears to act in a similar manner. Hence my reason for thinking that such spongy iron may be a *lower state* of oxidation than what is termed the protoxide. Now, such a thing *may be*, although apparently at variance with the atomic theory; for the variation would not be much greater than that class of combinations termed sesqui-oxide. I would just remark, that it was a Mr. Kane, who, I believe, first announced the effect of passing hydrogen gas over the peroxide of iron, but must still confess myself an unbeliever as to the existence of pure metallic iron being obtained by that process; if so, why fuse it into an ingot for exhibition? Why not weld it up at once into a lump with a forge fire, &c.?—S. B. ROGERS: *Nantyglo, Sept.* 21.

TO THE SHAREHOLDERS OF THE BLAENAVON IRON-WORKS.

GENTLEMEN,—It may appear somewhat presumptuous in my addressing you, but I have no doubt it will be readily excused, being partly in my own defence (as it is now endeavoured to make me the "scape-goat" for the sins committed by others), but principally to afford the necessary information, that you may form your own opinion as to future proceedings.

The Blaenavon Iron-Works, as at present conducted, can never compete in the market with the neighbouring iron-works, and for the following reasons—it has always been here a maxim to endeavour to produce a superior quality of pig-iron; and with the view of keeping up this superiority, the furnace manager has hitherto had everything he could possibly desire—nothing is denied him—he has known his power, and has kept it by invariably showing the danger of making bad pig-iron, and has had his choice of mine, coals, limestone, and materials. There are here four different veins of ironstone—"Bottom Vein Mine," "Ball Mine," "Pwll Tacka Mine," and "Black Pin Mine." The first of these has always been a fancy ironstone with the furnace manager; but if used fresh out of the works, without giving it time for the weather to act upon it, can never go clean to the works, and, without standing a sufficient time on the mine banks, no effort can produce it in a proper state for use. The present company has never held sufficient stocks at bank of this peculiar mine, to give time for its being cleansed by the action of the atmosphere; and for this reason great complaints have been made, and it has sometimes been worked at a loss. The "Ball Mine" contains the greatest per centage of iron, and for that reason has never been allowed to stop on the bank for any length of time to cleanse itself, although it requires nearly as long as the "Bottom Vein Mine." It has often been got out of the mine, and taken to the calcining works the same day—the cry of the furnace manager being continually "more Ball Mine." The Pwll Tacka Mine is also a very good mine, producing 37 per cent. of iron; but, unfortunately, has been generally rejected, always used sparingly and sulkily, although lately analysed, proving to produce equal to the most favoured ironstones, and abundance yet left near the works, while the favourite mines have been followed in all directions to an enormous extent. The "Black Pin Mine" is the uppermost worked in this royalty; may be obtained to a great extent, and cheaply; yet the manager will only use it sparingly, although also lately analysed, and found to contain as good a per centage as the "Bottom Vein Mine." Now, I believe, these series of ironstones were thus distributed by all bountiful Nature, and should be worked together in fair proportions; the furnace manager does not see things in this light; he has invariably selected those materials that cost the most money, and are most difficult to get, but which he thinks must make the best iron. Reasoning with him has been out of the question, the reply always pointing out the danger of questioning his opinion—"the quality of the iron must be attended to, cost what it may;" but I have always been taught to believe, *that gold may be bought too dear*. There are several veins of coal in this property, and many good veins scarcely touched; the "Meadow Vein," 4 ft. 3 in. thick, used at the neighbouring works, as their principal coking blast-furnace coal, has here always been refused, although close to the works; the "Boddellogg Vein," in places 5 ft. 6 in. thick, the cheapest to get here, could be delivered at the tunnel mouth at 2s. 6d. per ton, and there is more coal in these two veins than all that has been worked in Blaenavon Works for the 60 years they have been going. The "Horn Coal," again, is a good blast-furnace coal, very little of which has ever been got, but could be worked at a very moderate expense; the vein is 4 ft. 6 in. thick, and most convenient to work; these veins of coal are all passed by, and those which the manager delights in obtained from a distance of two miles.

Now, the coals employed by the manager at these works are, the "Old Coal," the "Three-quarter Coal," and the "Big Coal;" they are each in two veins; and by the improvident way in which they are worked, a most shameful waste is the consequence, the upper portion only being taken away, while the lower is left crushed and buried; although it is well known that a neighbouring company worked into the Blaenavon property, and obtained quantities of this coal which remained, coked it, and with it made excellent iron. The "Big Coal" is not so good a blast-furnace coal as the two former; but, were there a rolling-mill here, which there ought to have been long ago, the 3½ feet of this now left buried might be worked to great advantage; the adjoining works employ this coal for the purpose. The following will show the difference in the method of getting coal between the Blaenavon and other works in the district:—

	Thickness.	Sent Out.	Left in.
Old Coal	4 ft. 0 in.	2 ft. 6 in.	1 ft. 6 in.
Three-quarter Coal	4 2	2 11	1 3
Big Coal	6 0	2 2	3 10
At Blaenavon, out of 14 ft. 3 in.	they get 7 ft. 7 in.	lose, 6 ft. 7 in.	

From small and crushed, 1 ft. of this 7 ft. 7 in. is lost, making the average loss 7 ft. 7 in.; while, at other works in this district, and every iron-works and district I ever knew, or heard of, they always get out all the coal they can. Nor is this dreadful waste of coal the only evil; the roads in the colliery are going out at an extraordinary rate; and, at this moment, it is double the distance to fetch the coal underground than it need have been had proper economy been observed; half the number of horses, half the quantity of tram-plates, and a less number of trams, would have been required, and less repairs to effect, which here, per ton of coal, is a serious affair; and yet all these advantages have been lost, through, as it appears to me, the gratification of obstinacy itself. The thickness of the rejected

coal stands thus:—Horn Coal, 4 ft. 6 in.; Boddellogg, 5 ft. 6 in.; Meadow Vein, 4 ft. 3 in.; Engine Coal, 2 ft. 4 in.—16 ft. 7 in. The latter seam has not been before mentioned; it is the lowest worked here; there is a tunnel driven in it one mile; and 1,000,000 tons might yet be obtained from the seam. These coal measures, which would produce countless tons of superior coals, have been passed over, and the fancy coal worked some miles beyond; the entire loss stands thus:—The above coals unworked, 16 ft. 7 in.; wasted of fancy coals, 7 ft. 7 in.; total waste, 24 ft. 2 in.

I have been asked very significantly why more "Three-quarter Coal" was not sent to the yard, because "we could make 30 or 40 tons more iron per week, if we had more "Three-quarter Coal?" At this time they were receiving coke made from coal of the usual proportions—one of "Three-quarter" to two of "Old Coal;" and, although iron was then selling well, they were stocking best pig, on the furnace bank, to the extent of 2000 tons. I could mention numerous instances to show how caprice has ruled the management. I have known "Old Coal" (a fancy coal) condemned and refused, if it came out of a certain level—while the same has been got at another, and employed to the extent of thousands of tons, without a word of complaint. At one period, a certain person was ill—very ill; the bottoms of the "Old Coal" were sent out, mixed with the tops; and not a single complaint was made at the working of the furnaces, or quality of the pig-iron; but, when he recovered, all the bottom had to be left in the pit, and buried as usual. Thousands of tons of the "Pwll Tacka Coal" have I seen on the bank condemned; and only once did the manager come to a resolution to use this condemned coal, when the furnaces never made better iron. I have seen the time when a limestone quarry has become expensive, from heavy topping, a new one has been opened, where the stone could be got at 500*l.* a year cheaper, condemned by a word, and the men sent back to the old quarry. After a time, they were again shifted to the new, and the old expensive one abandoned; and not a further word of complaint has been said from that time until now. At some of the limestone quarries there is 16 or 18 ft. of blue limestone over the white. This blue limestone has been rejected and wasted for 30 years, although it has, at great expense, to be cut through to get at the white; but no sooner was there a change in the management, than the successor found the blue perfectly as good a flux as the white, which has been used to this day.

I think I have fairly proved that, with regard to ironstone, coal, and limestone, the cheapest has not been preferred, though equal in quality; that so far from economical management having been pursued, those minerals, the most expensive and difficult to get, have been demanded. The wish of the furnace manager has been the only thing consulted—he has ever had his own way, and has good reason for keeping up his consequence. By the present mode of getting coal, the cost is, upon an average, about 5s. per ton; and, be it known to all, that if the Blaenavon Company will employ their valuable property with moderate economy, and somewhat with the same advantages as their neighbours, I will undertake to deliver coals to Blaenavon coke-yard, including all expenses, at 3s. 9d. per ton; and, if there was a good rolling-mill at the new works, I would deliver coal there, excellent for the purpose, if, as I said before, employed as at other works, at 3s. per ton. There is a number of persons here who, while they know that furnace coal does not cost so much for getting by 20 per cent. as it did 20 years before, although the distance underground is considerably more, endeavour to insinuate that these coal expenses are the chief cause of the increased cost of a ton of pig-iron over that of their neighbour's, and endeavour to make me their "scape-goat"—saying that it cost 20s. more to make a ton of pig-iron at the Blaenavon works than at others in the neighbourhood. I believed them; I knew it was so—but does the blame lie on me? According to their own showing, the coal cost 5s. 2d. per ton; and, as it takes 70 or 72 cwts. of coal to make a ton of iron, its cost would be scarcely 20s. per ton to the ton of iron; it is clear, therefore, that, if they got their coal for nothing, they could not go into the market with their neighbours.

Now, I seriously ask you, gentlemen, proprietors of these works, if, in justice, all the sins committed, and failures which take place here, ought to be laid to my charge? Is there not a screw loose somewhere besides the wilfully wasteful, cruel, and sinful way, that the coal is got for the blast-furnaces? If they got it at the same price as their neighbours, as I have shown they could, it would scarcely save 5s. per ton on a ton of iron; ask the party to find how the other 15s. deficiency is to be accounted for? The fact is, they are picking and culling the materials, with the view of keeping up the quality of the iron, and, after all, are obliged to sell at the same price as others, who supply an inferior quality. Blaenavon iron sold well in days gone by; but competition has destroyed monopoly, and every manufacturer must go into the field, prepared to encounter strong competition. I have known the Blaenavon Company lately working on the same orders for railway iron as a neighbouring work, at which iron was made at 20s. per ton less than what it cost this company; it is true their iron is very superior, but they could get no more for their rails than those who put inferior iron in them. To sum up the whole of the matter, the manufacturer, who goes plodding on in the antiquated method, while his neighbours are straining every nerve to produce cheap goods, never can succeed; he must go down.

I have said nothing yet concerning the working condition of the mineral department of these works, which has been lately inspected by a gentleman of experience. I have no knowledge whatever of his report on the subject, but, from his well-known qualifications and respectability, I leave that with him, and, whatever he has said, I am willing to submit to.

BLAENAVON NEW WORKS.—The proceedings here have been matter of the greatest surprise to all who have had any knowledge of them, and that the expenditure was left in such hands as it was. Situate in a most splendid mineral property, both freehold and leasehold, the works might have been made highly productive; but, unfortunately, project after project was begun, but nothing carried out to completion; nor do I know scarcely one scheme out of hundreds, begun by the company's first new manager, that had not as well, if not better, been left alone. Let any person of intelligence and practice value the works—not a niggardly valuation, but put a full price on everything; then double the sum total, and it will not amount to that said to be expended either on the old or new works. It is said, that 64,000*l.* were expended for *improving* the old works; if practical and honest men had had the management of such a sum for the purpose, a very different result would have followed. I could mention many jobs, where, after the labour was finished, the ignorance of the undertakers was evident, and the uselessness of the work manifest. The whole of the money should have been expended on the new works, and not 64,000*l.* wasted on the old; and the Blaenavon Works would have been a splendid and perfect iron-work, in the very centre of minerals, running more than two miles in length north and south of it, and one mile to the west, with great advantage of drainage by the old works. It is stated, that 88,000*l.* were expended on the new works, which are not near completed; while the two sums (147,000*l.*), under an efficient manager, would have made the new works complete, blown in four or five blast-furnaces, and set up a forge and rolling-mill, which all good, sound, practical iron-masters say must be done before the Blaenavon Iron Company can go into the market with their neighbours. The following is what I calculate coal, ironstone, and lime, may be delivered per ton at the old and new works:—

		Cost.	Weight per ton of Iron.
OLD WORKS:	Coal	3*s.* 9*d.*	Tons 3 12
Present cost of labour and materials..	Ironstone	2 6	3 5
	Limestone	2 0	1 0
NEW WORKS:	Coal	3 2	3 12
Present cost of labour and materials..	Ironstone	3 6	3 5
	Limestone	2 2	1 0

But to effect this, there must be a surprising change in the management of the works. There is a number of managers now, while, the fact is, one good active man would be worth them all. "Management" now consists in inquiring what the furnace manager stands in need of, and whether he is satisfied with the materials? If he is satisfied, the others are of course, and the furnaces go well; if they do not, the fault is invariably placed on the minerals and the mineral agent.

Since the formation of the present company, they have never kept a stock of ironstone, which is a great drawback to an iron-work; the underground work should be carried on briskly, and a deal of ironstone got when wages are low. This plan pays well two ways—it would be got cheap, and also have time to stand and be effected by the operation of the atmosphere. When the price of iron is up, wages follow also, and mining becomes more expensive; but they have never had a manager here who had the most distant idea of underground workings, and, therefore, from their own ignorance, they become suspicious of others. They will not take any share of the responsibility of the mineral agent; but the whole, and a great deal that does not belong to him, is thrown upon his shoulders—while he goes prying about inquiring how things are going on underground, and interferes with the mineral agent's province from information thus obtained.—THOMAS DEAKIN: *Blaenavon, Sept.* 20.

SOCIETY OF ARTS—NEW MEDALS.

SIR,—A public announcement informs us, that Prince Albert, who is President of the Society for the Encouragement of the Arts and Manufactures, has been pleased to give two gold medals for competition during the ensuing session—the first for the best account of any new and improved machinery, or processes, employed in the cultivation, or preparation of sugar in the British colonies, designed to economise labour, and increase production; the other for the best cement for uniting glass, particularly for cementing glass pipes or glass roofs. In common with other members, I am glad to find Prince Albert setting an example alike honourable to himself, and calculated to restore our society to the useful purposes for which it was intended by the founders, and continued by its supporters until a recent period. The attempt of the officials in present power to subvert the institution from its noble and legitimate object—that of fostering mechanical genius, and encouraging useful invention by patronage and reward—to the mere advertising show-shop, and an exhibition-room of pictorial works, will, we trust, after the praiseworthy conduct of his Royal Highness, cease to be persevered in, to the detriment of its best interests, and opposed to the wishes of its oldest friends and supporters. The showy articles which the rooms were made the medium of displaying during the past session are, doubtless, clever and pleasing, but greatly out of character with the place; and the making the hall of the society a picture exhibition, is not only injurious to, and running into wanton opposition with, establishments constructed for the purpose, but highly objectionable to a great majority of the subscribers. R.

Trafalgar-square, Sept. 20.

[We readily insert the communication of our correspondent, as conveying sentiments we have repeatedly heard expressed, and with part of which we entirely coincide.]

IRON MINES OF NOVA SCOTIA.

SIR,—I enclose a report, drawn up by a gentleman who accompanied me from Scotland to examine the mines, brought under the notice of the British public by your Journal, in the course of the last summer, as the "Londonderry Mining Company of Nova Scotia"—and have to request that you would have the goodness to give it insertion in your valuable paper. You will perceive, by the accompanying documents, that two meetings were held here since my return, with a view to constitute a board of directors, which have terminated favourably—so that, in the course of a very short time, the shares applied for in Britain will, probably, be allocated, and operations commenced forthwith. JOHN ROSS.

Halifax, Sept. 7.

LONDONDERRY IRON MINES.

The following report, made after careful investigation on the spot, by a gentleman practically acquainted with the manufacture of iron in Great Britain, was submitted to some gentlemen assembled at the hotel, on Wednesday, Aug. 30. Its publication was then recommended, and it is now presented to the consideration of the public, together with the following extracts from a letter of Robert Mushet, Esq., most extensively known in England as an iron manufacturer, whose opinions on this subject may be safely considered of high authority. The specimens he refers to have been prepared, and may be seen at Mr. Keefler's Reading Room.

Extracts from Mr. Mushet's letter, dated 3d May, 1848:—"From an examination of the samples of iron ore forwarded to me from Nova Scotia, by the Londonderry Mining Company, I am enabled to pronounce, that no ore of equal excellence has hitherto been discovered in the United Kingdom; nor have I met with any which will bear comparison with it from abroad; and this has recently been confirmed to my mind by a series of experiments, from which it has resulted that cast-steel, of the most perfect quality, can be produced at once, by simple fusion, from this most remarkable ore." * * *

"I am about to furnish the Londonderry Mining Company with samples of bar and cast-steel, which shall not suffer by comparison with that prepared from the best Swedish marks."

TO THE DIRECTORS OF THE LONDONDERRY MINING COMPANY.

Halifax, Aug. 29.—Since I had the pleasure of meeting you the other day, I visited the iron and coal deposits on your property in Londonderry, with the view of becoming a shareholder; and, agreeably to your request, I beg to submit the following statement, as the result of my examination:—

MINE.—The iron ores are very abundant, the extent of the vein not yet ascertained, but enough has been exposed to show that the deposit, as regards mining operations, is inexhaustible, can be worked with great facility and economy, and the quality of the ores suits them for the manufacture of iron of every description. Flux can be had plentifully along with the ore.

FUEL.—There can be no scarcity of timber in the vicinity for a long period of years. The description of wood is suited to the smelting of iron, as well as to the manufacture of charcoal for iron purposes. Coal developes itself in various places, and from specimens obtained, it promises to be of fair quality; while a correct estimate on this point cannot be given, till it is perfectly opened up and examined in bulk—at present it appears to be extensively distributed over the property.

FIRE-CLAY can be procured in large quantities with comparatively little labour. A quantity which I saw dug out appears to be a superior description, well adapted to the manufacture of fire-brick and steel melting pots. This description of clay is of the greatest importance to the company, as it is of this material the various kinds of furnaces for the manufacture of every class of iron and steel are constructed. It is not frequently to be met with of first-rate quality, and bricks made from it are shipped from England to the United States and elsewhere in large quantities. Material for red brick is plentiful on the ground.

WATER.—Water, for general operations, is to be had in various localities, near the ore and fuel, in sufficient quantities to supply works carried on by steam-power alone. By the erection of a mill-dam at a point on the Folly River, where timber is plentiful, and about one mile distant from where the ore is largely developed, water-power, sufficient to carry on smelting operations, and drive extensive malleable iron-works, could be made available throughout the year; with the exception of a portion of the summer months, when steam-power would require to be substituted in the room of water. At this part of the river there is a flat or inter-vale, very suitable for the erection of works, from whence an easy road could be made to lead on to the highway, which is here close at hand.

ROADS.—I drove along a road about seven miles in length, leading from the mines to the shores of the Bay of Fundy. It appears to be in pretty good condition, at this season of the year. With two exceptions—neither of them of a serious description—this road would suffice for the traffic of the company, to and from the shipping port; but as the amount of their carriage begins to extend considerably, it would be desirable to have the road hardened and levelled in several places. I cannot speak of its state at other seasons, but I understand a party is prepared to conduct all the carriage of the company, throughout the year, and with the road in its present state, for 6*s.* sterling per ton.

LABOUR.—That class of workmen more immediately connected with the production of the iron, would require to be imported from England; but nearly the whole of the *outside labour*—such as raising the mine, preparing the fuel, conveying to the works, and thence to the place of shipment—together with a certain portion of the *inside labour*, could readily be supplied by this country, and at a rate of wages not exceeding that usually paid in England for the same description of work. Owing to the great purity of the Londonderry iron ores, three modes of procedure are open to the company—the manufacture of pig-iron, of malleable iron, of steel. Any one of these operations may be carried on separately and independently of the other two, or they might be conducted simultaneously and to advantage. According to a letter lately received by Mr. Ross, a practical gentleman near Glasgow, whom I know, and of whose experience in iron making I have a high opinion, has offered to erect a smelting furnace, capable of producing 100 tons or upwards of pig-iron weekly, on the following terms:—He will be at the expense of providing materials and erecting the furnace, with the exception of paying freight out from Britain on all he may ship, to its ultimate place of destination, together with about 2000 cubic feet of freestone, and whatever quantity of red brick, limestone, and sand he may consider requisite to erect the works, which would have to be paid by the company.

To enable him to do so, he asks 500*l.* sterling, when the articles are shipped, and a further amount of 1000*l.* in paid-up shares of the company, whenever the work has had a fair trial, and been found to answer his views. As a matter of course, the company would have to open the mines, make roads, build workmen's houses, and so on—all which might require a further sum of 1500*l.* sterling. Thus, the fixtures requisite for the production of 5000 tons per annum of pig-iron, would cost 3000*l.*; but, as the gentleman who offers to build the works proposes to take shares to the amount of 1000*l.*, the actual capital required to be *advanced* would not exceed 2000*l.*

The furnace could not be erected and in operation before the latter end of Sept. next year; it would, therefore, be necessary for the company to provide a floating capital of 5000*l.*, so as to enable them to carry on operations when the navigation of the Bay of Fundy is closed—during four or five months of the winter season—and while the produce could not be carried to market. It would thus appear, from this offer, that a capital of 7000*l.* sterling would suffice to commence the smelting of iron on the above scale.

The following quantity of mine fuel, &c., would be consumed annually, and shows what might be reasonably expected as the profit thereon:—

12,500 tons iron ore and flux, at 3*s.*	£1875	
12,500 tons timber, at 5*s.*	3125	
Labour and salaries	2250	
Wear and tear of works	500	
Interest on 7000*l.*, at 6 per cent.	420	
Contingencies	500	
For 5000 tons pig-iron, or per ton, £—	£8670	
Carriage to shipping port, at 6*s.*	£1500	
Freight, insurance, &c., to New York, at 15*s.*	3750	
United States import duty, at 10*s.* 6*d.*	2620—7870	
Or, per ton in New York, at 3*l.* 6*s.*	£16540	
5000 tons pig-iron, to sell in York, at 6*l.* 10*s.*	32500	
Showing an annual profit of	£15,960	

This offer I consider as very advantageous to the company.

A work for the production of malleable iron could be set agoing, capable of producing marketable blooms and bar-iron to the extent of about 15 tons weekly for a sum not over 3000*l.* sterling, or thereby, including machinery, buildings, workmen's houses, &c.

The iron produced ought to be equal in quality to Swedish iron, and there is nothing to prevent its being made at a price lower than the cost price of English iron. The circumstance of manufacturing, in the first instance, entirely with the *hammer*, would increase its cost to the company; but I am of opinion, that the cost of the *best hammered charcoal bars* would be within 6*l.* sterling per ton.

When the water-power is made available to drive machinery to *roll* this iron, its cost ought to be reduced to about 5*l.* 10*s.* per ton. The entire outlay in the works ought not to exceed 10,000*l.*, when capable of turning out 100 tons weekly; and the additional outlay over the original cost of 3000*l.*, ought to be derived from the profits realised, without farther calls on the shareholders, which, I doubt not, would be the case within a short period. The character of the steel manufactured from this ore, has been established by authority which cannot be disputed, as of a superior description. There can be no doubt, that it will equal any steel manufactured in England from Swedish iron.

The amount required for erections and machinery to produce 3 tons cast steel weekly, in a state ready for sale, would not exceed 2000*l.* The cost per ton would be about 20*l.*, while the present selling price of such steel in England is 60*l.* per ton. These ores have been proved to work in their manufacture into iron and steel, with unusual freedom and facility.—In conclusion, I may state, that, from what I have seen of the Londonderry Mines, &c., I am persuaded, that, to any company commencing operations in a proper way, they cannot fail in proving a source of immense wealth, as there appears to be nothing wanting in the property to carry on, successfully, the iron trade in all its branches. The works contemplated in the foregoing statement, as compared with the capabilities of the mine, together with the extensive markets open for their produce, would be merely experimental, and of very limited extent, in comparison with the English and Scotch iron-works. If the capital contemplated by the proprietors were at once brought to bear on them, I am of opinion that the favourable results produced would exceed those of any mining operations with which I am acquainted. WILLIAM CAIRNS.

EMPLOYMENT OF SLAVES BY ENGLISH COMPANIES.

SIR,—Scarcely a packet arrives from the coast of Brazil which does not bring some horrible account of the sufferings of the unfortunate slaves, who are imported from Africa into that country; and, when we reflect that thousands of our fellow-creatures perish annually in their transit from Africa to Brazil, it becomes an indispensable duty to devise some measures to put a stop to this disgusting and disgraceful traffic. The only effectual remedy is, to remove all our cruisers from the African coast, and concentrate them on the Brazilian coast, and to declare it piracy for every and any one engaged in it. By keeping a strong steam force from Rio, as far down as Bahia, always cruising about, it would become almost impossible for a slaver to land her cargo.

The Brazilian Government is also becoming alarmed at the prospect—and no very distant one I fear—of the slaves revolting, and would gladly put a stop to the further importation of them. Slavery is the curse of that country—the inhabitants are becoming more and more demoralised; virtue and honour are unknown among them. Afraid to educate their slaves—not even allowing them to read the sacred word of God—they make them lead the lives of brutes, punishing them with the lash, if they do not fulfil their wearisome tasks to their satisfaction—in fine, treating them as if they were merely born to become the helpless victims of their cruelty and tyranny, and the females of their lust.

Shall it be said that England will allow this to proceed? Will it be believed that, both in Brazil and Cuba, there are English companies who possess and hold large numbers of slaves (many thousands)—who, in defiance of the laws of their country, continue to hire slaves, for long periods, to evade the law, which makes it felony for English subjects to *purchase* slaves? Will it be believed that these companies are conducted by merchants and others in this country—men who, perhaps, have subscribed to put down slavery? What slave-holding country will believe that England is sincere in her endeavours to put down slavery, when she allows her own subjects to trade in, hire (purchase?), and employ slaves?

It is shameful that these things should be permitted to continue. It is disgusting that English gentlemen should lend themselves to this infamous trading in human blood. It is a mockery of all civil and divine laws, and unworthy of so great a country, which ought to set an example to the whole world.

These companies should be forced to liberate their unfortunate slaves; and, if they wish to work their mines, let them hire freemen and pay them, and not encourage and promote slavery, by employing negroes in their mines who are slaves, and cannot help following the commands of their mercenary masters, who, to obtain a few pounds of gold, do not scruple to force them to work in the mines, contrary to their own will and inclinations. The air in the gold and copper mines is most fatal, as the precautions usually taken in England, to prevent foul air forming therein, are not availed of. This accursed traffic, sooner or later, will end in the destruction of all who are concerned in it; and a bitter account will they have to render who are now making money by the blood of their fellow-creatures.—HUMANITAS: *City, September* 20.

SINKING FOR COAL.

SIR,—In the *Mining Journal*, of the 9th instant, a correspondent, Mr. J. Williams, of Glasgow, inquires, how he is to proceed with a pit, which is down 14 fms. in quicksand, and having come to a hard rock on one side, while the other half of the sinking is in sand? I think he should be thankful that he has one safe side to his pit; he must go down with the other to the bottom of the quicksand, and place curbed work of timber on the sandy side, resting against, or rather into, the rock, being particular that the curb is sufficiently back, to admit brick or stone work in front, without curtailing the dimensions of the shaft. When this curb work and masonry has been made secure to the bottom of the sand, take away the rock, either beginning at top or bottom, to a sufficient width to admit the complete circling of masonry, or brickwork, all round the pit.

Blaenavon, Sept. 19. T. DEAKIN.

IMPROVEMENTS IN OBTAINING AND APPLYING MOTIVE-POWER

SIR,—I think your "Steam" correspondent must have been labouring under the influence of an excess of *caloric* when addressing the letter under the above title, which appears in the *Mining Journal* of the 9th inst., as it is scarcely conceivable that any one in their sober senses could have written such nonsense. In the first place, it was, I am sure, quite superfluous for you to be told that "the great majority of the patents taken out for mechanical improvements were utterly worthless," &c. All this must be well known to all who take an interest in new inventions. With regard to the "lump of wax" and "cost of a patent," I should be glad to see him nibbling away at them, until they cease to disgrace a nation *calling* itself enlightened; but the way to get rid of this, and other relics of a barbarous and superstitious age, is not by twitting one another about their "craniums," but by exhibiting charity and kindness in pointing out each other's errors; and, if it happens that I have not originated anything that shall prove *useful* to the public, I know that it will not be *beneficial* to myself. Your correspondent, in one sentence, alluding to my specification, declares, that "the *whole* document is a mass of crude, complex, and inapplicable nonsense," &c.; and, in the next sentence, admits that he has only seen part of it; and, had he been honest, he might have told you he had seen *no* part of it, except the *abstracts*, that have appeared in your columns, which, without the aid of drawings, for illustrating the principle of the inventions, were not sufficient for *scientific* men, much less himself, to form correct conclusions as to their real merits; and if my invention for generating steam is the same that was patented 10 or 11 years ago, how came it that the one is "complex" and the other "simple?" and how long ago was it discovered that the placing of a tube, between the rails, the *whole length of the line*, was the same thing, and would be no more expense than attaching a *short tube*, the length of the train, to the axles of the carriages? and, again, when and by whom was it decided that there was no difference between the use of compressed or rarefied air, and the employment of high or low-pressure steam? According to your correspondent, there would be no difference between shooting away the *bullet* or the *barrel* of his gun; and I would recommend warriors to adopt the latter plan, as it might be a means of bringing their disputes to a settlement, without spilling so much blood.

"Steam" has discovered that I have conceived how to give my propelling tube all the flexibility it may require; but as he could not have learned this from your columns, and as it is evident he has not seen the specification, or he would have known something of the rotary engines, which he confesses he does not, he must, therefore, have obtained his information from some other source; and it might have been as well for him not to have furnished a clue to his detection, as, in the event of the public being informed who and what he is, it may be inclined to think rather unfavourably of his character and conduct. However, "he cannot, for the soul of him, see how I am to keep life in this propelling tube." I will endeavour, as briefly as I can, to explain how it will be effected. I will suppose that this tube shall be used as an auxiliary power, in conjunction with a locomotive engine; it shall be of such capacity as to contain in a length, equal to the circumference of the driving-wheels, all the steam that shall pass through the cylinders of the engine during one revolution of the wheels, when expanded, to 15 lbs., or atmospheric pressure; the ends of the tube will be enlarged, or trumpet-mouthed, and will be provided with self-acting valves, situated a short distance within the ends; the induction-pipe, for the steam from the engine, will be close behind the valve at the fore-end of the tube; the pistons will be hollow tubes, fixed horizontally on hollow supports in a proper position between the lines of rails, and at such distance apart that one enters the fore-end of the tube a little before the one at the back end leaves it; the pistons are to be provided with self-acting valves, for opening and closing its ends; a pipe, for condensing the steam, is carried along the line of railway; this pipe may be enlarged in the vicinity of the pistons, which, as far as practicable, one double line should be opposite each other; and the greater part of the pipe would not require to be above (say) 3 or 4 in. diameter. The enlarged portion to be enveloped in water, to ensure speedy condensation; or, instead of enlarging the pipe, proper condensers might be provided; the condensed water will be collected, and will be of great value for supplying the boiler of the locomotive. Small stationary engines will be provided for pump-

ing out the uncondensed steam, or air, from the tube. When in operation, the steam will enter the tube at the foremost end; and, as the tube advances from the first piston, it will become charged with steam; and on the next piston entering the tube, the steam will pass through it into the condenser, where it will be condensed, and a vacuum produced in the propelling tube. I should have stated, that the propelling tube will be covered with felt, or other non-conductor of heat, to prevent the steam from being condensed in the propelling tube; and I may also state, that this arrangement is neither more nor less than a combined high and low-pressure engine—its action being not "complicated," but perfectly simple, which your scientific readers will readily perceive.

Now, as to the additional power, which by this apparatus is made available, it will be found to be more than equal to that at present obtained—or, in other words, the power, derivable from a given volume of steam, will be at least doubled, without the necessity of increasing the weight of the engine. The present practice is not to use the steam expansively, but to a very slight extent; and there is always a "back action" on the piston, considerably above atmospheric pressure, by which a greater loss is sustained than is secured by the slight expansion of the steam in the cylinders. If a cubic foot of steam, at five atmospheres, employed non-expansively, produce an effect of four, when expanded to one atmosphere, it will, by being condensed, produce an effect of five, which five is a clear gain over the non-expansive and non-condensing system, as at present practised; and if the amount of power, derivable from the tube by the mere act of condensation, is equal to the power otherwise derivable from the engine, it follows that engines of only half the power of the present ones would be sufficient, and would require only half the amount of fuel and water; and, as the tube, or low-pressure cylinder, acts independent of the "bite" on the rails, the engines would require to be of only one-half their present weight. I hope, by this slight description, to have removed "Steam's" difficulties, and enabled the rest of your readers to conceive the principle of this part of my invention.

In conclusion, I am happy to state, that I have *not* the misfortune to be one of those inventors who "never obtain an opportunity of manufacturing a single specimen of their inventions for practical purposes;" for it happens that a rotary engine, on the principle of my invention, has been constructed here, and will have "steam," *in her to-morrow for the first time.*

Dee Foundry, Aberdeen, Sept. 12. J. WESTON.

[Mr. Weston's patent agent, Mr. Campin, informs us, with regard to the rotary engine, that it has been communicated to him, that a successful trial of an engine built on his plan has just taken place at Aberdeen, where it was made. The first time of getting up the steam, it began to revolve with gradually increasing velocity, which soon increased to a fearful degree, when it was applied to the punching machinery of the factory of Messrs. Vernon (the maker of the engine) which it drove with ease, and to the entire satisfaction of all present. Next week we shall endeavour to give the remainder of Mr. Weston's specification, and the full particulars of this trial.]

THE RAILWAY INTEREST.—For some time past a conviction has prevailed in the minds of those best acquainted with railway affairs, that all those lines whose interests are in any degree conflicting, should be governed by some amicable arrangement for the protection of their mutual interests. To promote this desirable object, we have been informed that Mr. Chaplin, M.P., chairman of the South-Western Railway, and Mr. Russell, chairman of the Great Western Railway, met Mr. Glyn, M.P., chairman of the North-Western Railway, yesterday, at his house in Lombard-street. The result of this conference, we believe, has not transpired; but we have no doubt that it will be highly beneficial to the welfare of their respective companies. We feel perfectly warranted in stating, that the management of all the metropolitan railways ought to be guided by some general arrangement, which might be rendered equally beneficial to the contracting parties and the public. The operation of railways on public convenience is not yet perfectly understood; and they only require a better application of the powers they possess to render them, notwithstanding the money that has been injudiciously wasted on them, as profitable as they were expected to be.

THE COPYING TELEGRAPH.—Several experimental trials have recently been made of Mr. Bakewell's copying electric telegraph, with a view to ascertain whether the amount of electrical power, transmitted by the wires of the Electric Telegraph Company, is sufficient to work the copying instruments. The experiments were made between the Electric Telegraph Company's branch station in Seymour-street and Slough, that being the only station at which the wires could be spared for experimental purposes. The results proved most satisfactorily, that the same power which is requisite to work the needle telegraph, is amply sufficient for the copying process. Messages written in London were received at Slough, copied on paper, and in the form of the original writing, the character of which might be readily recognised. Speed of transmission was not attempted with the small model instruments employed; but the messages were, nevertheless, transmitted, with a single wire, with double the rapidity of the needle telegraph. We understand that Mr. Bakewell expects to be able, with instruments constructed on the working scale, to transmit *fac simile* copies of more than 400 letters of the alphabet per minute with a single wire; and, by using two wires, as now practised, the rapidity would be doubled.

THE BRITANNIA AND CONWAY BRIDGES.—The report of Mr. R. Stephenson, presented to the meeting of the Chester and Holyhead Railway, on Wednesday last, stated that the construction of the second tube of the Conway-bridge is far advanced, and there is no doubt it will be ready for removal by the middle of October. The pontoons have been strengthened, the capstans re-erected, and every other arrangement in a forward state for its erection. About three-fourths of the masonry of the Britannia-bridge have been completed; and, taking the progress now making as the guide, it is calculated that the first tube will be ready for lifting to its place in the course of next March or April. The iron-work at the Britannia-bridge has progressed even more rapidly than was expected, and the four large tubes are just approaching completion. The whole of the central portion of the tubes is finished, and the castings at the ends are now being inserted. The scaffolding for the end tubes on the Anglesea side is complete, and a large proportion of the iron is already punched for their immediate commencement. The scaffolding necessary for the tubes on the Carnarvon side will be erected immediately, to open the line throughout as rapidly as possible. Every arrangement is being made for floating the tubes as soon as the masonry is ready. The works throughout the whole of the line are standing in the most satisfactory manner. The daily passage of heavy trains through the Conway tube for four months, together with a series of careful observations as to the effects produced, have completely established the correctness of the views upon which the designs for this and the Britannia were based. The cost of these structures has very much exceeded what was originally calculated upon; on reconsidering, however, the whole subject, Mr. Stephenson is satisfied that the method which has been adopted is certainly the most eligible, if not the only practicable one.

THE ROYAL GENERAL ANNUITY SOCIETY.—A meeting of the board of directors of this institution was held, on Tuesday last, at their offices in Basinghall-street, City, for general business. The report congratulated the subscribers on the steady progress which was being made, there being at present 10 male and 19 female annuitants; the former receiving 2*l.* 5*s.*, and the latter 1*l.* 10*s.* per month. These persons comprise decayed merchants, bankers, professional men, tradesmen, master manufacturers, and their widows, and single females, daughters of persons of such classes. The directors also had the pleasure to state, that the former rule, limiting the benefits of this important charity within 20 miles, was altered, leaving it open to applicants from all parts of the kingdom. The receipts for the past year were 1396*l.* 8*s.* 2*d.*; the expenditure left a balance of only 80*l.*

COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—Bate's West Hartley 15 9—Buddle's West Hartley 16 6—Chester Main 13 9—Holywell Main 14 6—New Tanfield 14—North Percy Hartley 15—Ord's Redheugh 13 6—Tanfield Moor 14—Walker's Primrose 12—Wylam 13 6—Wall's End Brown's 13 6—Benson 15—Framwellgate 15 3—Gosforth 14 9—Hedley 14 6—Killingworth 14 9—Percy Benham 14—Walker 14 3—Wharncliffe 14 9—Washington 14—Eden Main 16—Lambton Primrose 15 9—Belmont 16—Braddyll's Hetton 16 6—Bell 16—Hetton 17—Haswell 17 3—Morrison 14 6—Russell's Hetton 16 9—Shotton 16—Stewart's 17 3—Caradoc 16—Hudson's Hartlepool 15 9—Thornley 16—Adelaide Tees 16—Cowndon Tees 15 3—South Durham 15—Tees 16 9—Tees Hetton 14 3—West Cornforth 15 3—Hartley 15 6—Powell's Duffryn Steam 19 6.—Ships at market, 158; sold, 85.

WEDNESDAY.—Bates's West Hartley 15 6—Buddle's West Hartley 16 6—Chester Main 13 9—Davison's West Hartley 16 6—Holywell Main 14 6—New Pelton Main 11—New Tanfield 14—North Percy Hartley 15—Ord's Redheugh 12 6—Tanfield Moor 13 6 Tanfield Moor Bute's 13—Townley 13 9—Walker's Primrose 12—Wall's End Bewicke and Co. 15—Brown's 13 6—Benson's 14 9—Harton 14—Hotspur 14—Hilda 14 3—Killingworth 14 9—Northumberland 14—Mulgrave 14—Walker 14 3—Washington 14—Eden Main 15 6—Lambton Primrose 15 3—Belmont 15 9—Braddyll's Hetton 16—Bell 15 9—Hetton 16 6—Haswell 17 3—Lambton 16—Russell's Hetton 16—Stewart's 16 9—South Hartlepool 15 9—Thornley 15 6—Adelaide Tees 15 9—Denison 15—Seymour Tees 15—South Durham 14 9—Tees Hetton 14—West Cornforth 15—West Hartley Netherton 16 6—Hartley 16 9—Powell's Duffryn Steam 19 6—Elgin 15 6.—Ships, 181; sold, 90.

FRIDAY.—Bate's West Hartley 15 9—Buddle's West Hartley 16 3—Chester Main 13 6—Dean's Primrose 13—Hasting's Hartley 16 3—New Tanfield 14—Tanfield Moor 14—Walker's Primrose 12 6—Wylam 13 6—Wall's End Brown's 13 6—Riddell's 14 6—Walker 14—Eden Main 15 6—Braddyll's Hetton 16—Hetton 16 6—Haswell 17—Keepier 16—Lambton 16—Russell's Hetton 16—Shotton 15 9—Stewart's 16 6—Whitwell 15—Kelloe 15 3—Trimdon 15—Richardson's Tees 14—Tees 16 3—Whitworth 14—West Hartley Netherton 16 6—Hartley 16—Snapethorpe 14—Elgin 15 6.—Ships, 121; sold, 56.

LITERARY NOTICES.

On the Subject-Matter, Title, and Specification, of Letters Patent for Inventions, and Copyright of Designs for Articles of Manufacture. By THOMAS WEBSTER, Esq., Barrister-at-Law. London: Elsworth, Chancery-lane.

The great importance, to inventors and patentees, of a general knowledge of the principles of the patent and registration laws, and the absence of any concise work on the subject yet, containing general information, have been the causes of the production of the publication before us. The writer is also the author of *Law and Practice of Letters Patent of Inventions*, and *Reports and Notes of Cases on Letters Patent of Inventions*, which, together, form a very perfect and valuable collection for reference on every subject, and its bearing, connected with the patent laws. The following extract from the preface is clearly descriptive of to what portion of the labour all inventors should fully give their minds, the more practical proceedings for obtaining the patents being properly left to others:—"The author, or proprietor, being satisfied as to the novelty, practicability, and utility of the invention for which protection is about to be sought, must ascertain whether it is the subject of protection, either by letters patent or registration; he has then to determine on the title of the invention, and afterwards to provide such a description, as, when presented in the proper form, shall constitute the specification, or registration. The selection of the title, and the preparation of the specification, or registration, whatever may be the assistance derived from others, are matters to which the inventor must himself give attention; he alone is in full possession of the objects in view, and unless the title, specification, and registration—formal matters only excepted—meet his views in every particular, he must not be surprised at finding, when too late, that something has been omitted, or inserted, which would have been otherwise had he been better acquainted with a few well-established rules and principles. The importance of this subject cannot be overstated; for it will be found, on an examination of the recent cases in which letters patent have been held invalid, that either an insufficient title or an informal specification has been, almost invariably, the ground of invalidity. Even in those cases in which want of novelty, or of utility, as to part of the invention, has been the apparent ground of invalidity, the real defect has generally been in the manner in which such part was described or claimed in the specification." The work contains a well-digested detail of those rules and principles so necessary to be known by patentees, with notices of various difficult specifications, and the various points on which the real patent right hinges, with law cases, the opinions of the judges, &c. Every information relative to the subject matter of the patent, the specification, and the principle of an invention, is fully entered into; and we have no doubt, but that the volume, which is of moderate dimensions, and well printed on good paper, will meet with ready sale.

Essay on the Elements of British Industry; comprising Remarks on the Cause of our present Depressed State—Agricultural, Commercial, and Manufacturing, English, Scotch, and Irish; with Suggestions for its Removal. By W. BURNES, late Land Steward to his Grace the Duke of Manchester. London: Longman, Brown, Green, and Longmans, Paternoster-row.

This essay, as the author informs us in his preface, is intended to present a brief outline of the present depressed state of British industry, and the necessary steps which must be taken in order to effect an improvement; his views being to turn attention into the proper channel, particularly that of the class for the benefit of whom his pen is more particularly engaged—farmers' sons. On tracing the development and progress of the elements of industry from the earliest times, he proceeds to explain how, during the last two centuries, from the science of labour being better understood in some parts of this kingdom than others, the march of improvement has been much more diversified than at any previous period. In England, and the greater part of Scotland, civilization has proceeded at an accelerated speed; while in some parts of Ireland, and the Highlands of Scotland, matters have rather gone in a retrograde direction.

The author then proceeds, at great length, to explain his views of the causes of the present unhealthy state of industry all over the kingdom; but particularly the agricultural and manufacturing interests of Ireland, with the law of tenant right, and his own experience in that country, are largely animadverted on. His suggestions for the removals of the existing evils are—1. The reformation of our labouring population, agricultural, commercial, and manufacturing, to be effected through the adoption of task work, spade husbandry, and the introduction of machinery into Ireland and the Highlands of Scotland.—2. A land-improving scheme, comprehending every improvement connected with the soil, embracing the industry of landlords, capitalists, and all other classes not included in the first scheme—and 3. Colonization, comprising relieving this country of surplus population, and improving the colonies, embracing the industry of all classes of the community, domestic and colonial. With respect to this latter subject, the author takes the same views which we have often expressed—the want of a well-defined system of emigration; he truly observes, that "At present the settler is left to fight single-handed, against every opposing element which a strange land and climate throw in his way. No attention is paid to the balance of the different branches of industry. The expense of labour is such as almost to exclude manufacturing and commercial industry—at least from entering the field on equal footing with that of the mother country. Both countries are actually suffering from two opposite extremes, which ought always to balance each other. At home labourers are idle, and starving for want of bread; while in our colonies masters cannot find servants, or mouths to consume even the agricultural produce of their own labours."

THE ATMOSPHERIC SYSTEM.—We are happy to learn that Messrs. Clarke and Varley are about constructing a short line of railway, on their system of atmospheric traction, in the neighbourhood of Dartmoor. This will afford the inventors an opportunity of publicly testing the superiority of their system over the exploded one of Messrs. Samuda and Clegg.

GREAT INDIAN PENINSULA RAILWAY COMPANY.—A letter has just been published, in the shape of a pamphlet, to Sir James Law Lushington, Bart., chairman of the Hon. East India Company, by C. Nicholson, Esq., superintending director of the above railway company, in reference to the affairs of the company, and in consequence of the uncertain relations between the hon. Court and the company, relative to the promised guarantee. The writer sets out by disclaiming the intention of charging the Court with insincerity, or lukewarmness; and, from their past conduct, he assumes, that they are anxious to give every support to the company. He then takes a twofold view of the question—first, the necessity of assistance, in which he states that, within one month of the publication of the remodelled prospectus, in which the 5 per cent. was guaranteed, 22,408 shares were subscribed for, 640 per day; but, from the publication of the discouraging letter of the Court, in reply to Mr. Slaughter, of the Stock Exchange, disparaging and limiting the guarantee on the 2d inst. to the present time, the applications have been only 700, or 77 per day.—He, secondly, proceeds to show how the Court may, without risk, lend the needful aid; that the cost of iron, and the construction of the works, are no longer estimates, but definite amounts fixed by positive contracts in one case, and positive tender, waiting only for execution, in the other. The bridges and viaducts are to be constructed for a double way, but a single line of rails only laid down, by which the traffic can be amply tested, and 100,000*l.* of the capital husbanded; and that, on the working of two trains, a profit of 9½ per cent. would accrue on the smaller capital of 400,000*l.* These views are fully supported by a statement of the capital account, estimate of cost of working two trains, and a profit and loss account, showing the estimated return for the capital as above, and, if a double line is completed, 7½ per cent. on the 500,000*l.*

RAILWAY SIGNALS.—The frequency of accidents on the various lines of railway has naturally led to the inquiry whether some scheme might not be devised, by which facility could be afforded for opening a communication between the passengers and drivers. If this could be successfully carried out, at least one source of peril and annoyance to railway travellers would be lessened, if not entirely obviated. In fact, a comprehensive plan of railway signals is the great want of the day, and a step in the right direction has been effected by Mr. Edwards, of Cambridge, who has invented an ingenious "design for railway signal to be applied to passenger carriages employed on railways, the object being to enable persons travelling by such conveyances to give immediate notice to the guard or driver of the engine in case of danger, or other circumstances requiring attention." It would be difficult to describe this invention without a reference to the plan; but we may state that, by simple machinery, at the command of every passenger, a signal lamp for use by night, and a board by day, may be elevated above the roof of the carriage, to such a height as to ensure attention either of the driver or guard. Connected with the signal rod is a spring, "which, when the rod is raised sufficiently high, opens, and supports the signal, and prevents it from falling until the attention of the guard or engine driver has been directed to it, when, by pulling the handle, it will be instantly lowered in readiness for the next operation." It thus appears that, as far as the passenger is concerned, a means of making known his desire for communication with the guard or driver is acquired. But this does not go far enough: the person to be communicated with for all effective purposes is the driver, and the difficulty of calling his attention from his engine to what is going on behind him, is yet to be surmounted; for even supposing the guard to see the signal here described, he has no control over the engine, and till that be the case, we fear that Mr. Edwards's scheme, though good and sufficient as far as it goes, is yet defective and incapable of absolute utility, by reason of its just stopping short of the very link in the chain of communication, without which all the others are comparatively useless.

RAILWAY IN SOUTH AUSTRALIA.—A meeting of gentlemen connected with South Australia took place on Wednesday last, in the Exchange-buildings, to hear the result of a correspondence between Lord Grey and a committee constituted to promote a railway from the city to the port of Adelaide, in South Australia. The committee consisted of Col. Torrens, Mr. Hunt, Mr. Dunlop, Mr. Parker, and Mr. Bovill. The correspondence, which included reports of the Railway Board and Colonial Land and Emigration Commissioners, having been read, Mr. PARKER said, that he congratulated the friends of the colony on the result of the correspondence with Earl Grey. The proposals of the committee had been met in the best possible spirit, and the projected railway with the greatest encouragement.—Earl GREY, in reference to the applications for a grant of the requisite funds, had stated, "that as regards the disposal of the public land necessary to the undertaking, he entertained no objection to the proposal of the committee," consequently the outlay of the company would consist of rails, sleepers, engines, carriages, and other incidental expenses.—After some remarks from Mr. HUNT and other gentlemen, it was resolved that the company be formed; and a provisional committee having been selected, the meeting broke up.

A half-yearly meeting of the Shropshire Union Railways and Canal Company was held at Shrewsbury, on Friday, the Right Hon. the Earl of Powis in the chair. The secretary read the report, which stated that the works were in such a state of forwardness as to enable the directors to speak with confidence of the line being opened throughout early in the ensuing spring. The balance in hand was stated to be 50,273*l.* 12*s.* 4*d.*—*Aris's Birmingham Gazette.*

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